NORTHERN NIGERIA

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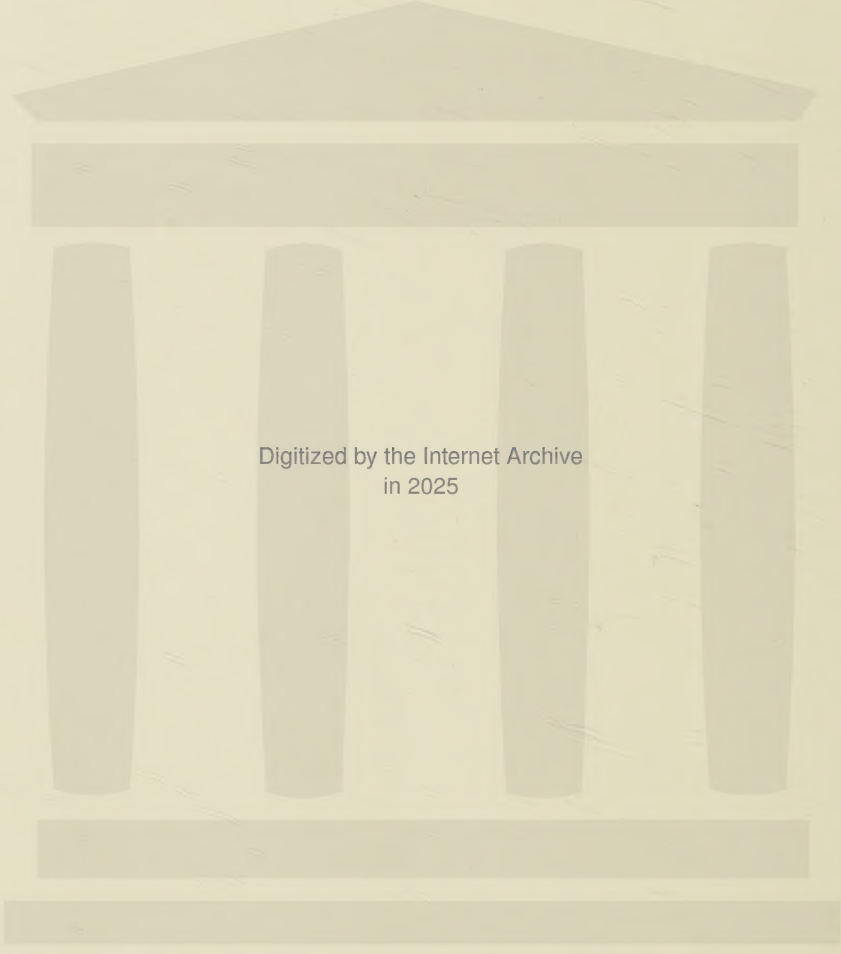

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FOREWORD

BY

THE HONOURABLE MU'AZU LAMIDO, M.H.A.,
MINISTER OF ANIMAL AND FOREST RESOURCES

This is yet another year of progress in the creation and management of the Forest Estate of Northern Nigeria. The Six-Year Development Plan was launched during the year under review and five out of the eight Development Projects of the Forestry Division were initiated during the year. Due to shortage of professional and technical staff it was not possible to implement fully the various sections of some of the projects. Nevertheless definite progress has been made during the year in all fields of the Development Plan.

One of the highlights of the year was the acceptance, by the Government of Northern Nigeria, of the White Paper on the Statement of Forest Policy for Northern Nigeria. This policy is designed specifically to suit the conditions of Northern Nigeria and it replaces the Forest Policy of 1945 which was drawn up to cover the widely differing conditions of the whole of Nigeria.

The Regional Game Preservation Unit showed considerable progress in the development of the Yankari Game Reserve and for the first time the Yankari Game Reserve was opened to the general public. The development of another game reserve, Borgu Game Reserve, in Ilorin Province, had started and it is expected that this will be opened to the public in the near future.

The Chief Conservator of Forests, Mr P. C. Randell, E.D., proceeded on retirement leave towards the end of the year. Mr Randell left this country after thirty years' service to the Forestry Departments of the Governments of the Federation of Nigeria. I wish him long life to enjoy his well-earned pension.

ALHAJI HON. MU'AZU LAMIDO,
Minister of Animal and Forest Resources,
Northern Nigeria

THE GOVERNMENT OF NORTHERN NIGERIA:—

Clause 7.—CHARGES the Forestry Division of the Ministry of Animal and Forest Resources, together with the Native Authority Forestry Service of Northern Nigeria, with the duty of:—

(1) Creating a permanent national forest estate by the selection, and constitution as forest reserves, of as much of the forest lands of Northern Nigeria as may be necessary to ensure the supply of the timber, poles, fuel and other forest products required by the population and also to ensure the stability of the climatic and water regime, consistent always with the need for land for essential food production.

(2) Ensuring that the permanent national forest estate so created shall be perpetuated, protected and properly managed in such a manner as to derive therefrom the maximum benefit to the national economy.

(3) The provision of technical advice and assistance, where required, to all bodies engaged in or concerned with forestry activities.

(4) Co-operation with all other interests concerned with the use of land for the benefit of the national economy.

THE GOVERNMENT OF NORTHERN NIGERIA further:—

Clause 8.—RECOGNISES the importance of ensuring an adequate supply of general purpose and constructional *timbers* as a necessary aid to the development of the country.

Clause 9.—RECOGNISES ALSO that the present area of High Forest lands within Northern Nigeria cannot be sufficient to ensure the means of production of the total quantity of timber which is, and will in future be, required for the purposes of the national economy.

Clauses 10.—ACCEPTS THEREFORE that all available areas of High Forest not yet included in the permanent national forest estate should, if possible, be brought into the forest estate by reservation.

Clause 11.—That the management of the *High Forest* portions of the permanent national forest estate should be guided by the following principles:—

(1) That the High Forest Reserves should be so managed as to obtain, consistent always with a sustained yield, the maximum volume out-turn of general purpose and constructional timber.

(2) That, in order to reduce the future shortfall between production and consumption of timber, wherever local conditions of climate, soil and water regime within the forest estate permit, species suitable for the production of general purpose and constructional timbers should be established in forest plantations.

THE GOVERNMENT OF NORTHERN NIGERIA further:—

Clause 12.—RECOGNISES that, with increasing population and the increasing intensification and modernisation of agriculture, the *savanna forest reserves* of Northern Nigeria will eventually become the only source of supply of the vast quantities of poles and fuel required annually by the national economy.

Clause 13.—RECOGNISES ALSO the necessity to perpetuate and maintain, within the savanna forest, areas assigned to grazing as a means of ensuring the continued well-being of the cattle industry.

Clause 14.—ACCEPTS THEREFORE that the management of the savanna forest reserves within the permanent national forest estate should be guided by the following principles:—

(1) the selection within the savanna forest reserves of these areas which, by virtue of the conditions of soil, climate and water regime, are most suitable for the production of timber, poles, fuel or other forest products and the dedication of those areas to the production of timber, poles, fuel or other forest products.

(2) the utilisation of those areas of the savanna forest reserves not immediately required for the production of timber, poles, fuel or other forest products for the purpose of grazing, consistent always with the essential principle of sustained yield.

(3) the necessity, in order to reduce the future shortfall between production and consumption, to establish, wherever conditions of climate, soil and water regime permit within the savanna forest reserves, forest plantations of species suitable for the production of timber, poles or fuel.

(4) the management of both those areas of natural forest and forest plantations, within the portions of the savanna forest reserves assigned for the production of timber, poles, fuel or other forest produce so as to obtain the maximum utilisable volume production, subject to the principle of a sustained yield.

THE GOVERNMENT OF NORTHERN NIGERIA further:—

Clause 15.—RECOGNISES the necessity, of maintaining efficient Forest Services, eventually to be staffed at all levels by appropriately trained and qualified indigenous officers and personnel, and of ensuring, as far as is possible within the national economy, the provision of the financial means by which the Forest Services may be enabled to carry out the duties with which they are charged.

Clause 16.—RECOGNISES the necessity for the intensification of forest research.

Clause 17.—RECOGNISES the necessity for the better education of the peoples of Northern Nigeria into a proper understanding of the value of the forest resources of their country.

Clause 18.—RECOGNISES the necessity for the encouragement of indigenously owned and operated forest industries for the improved utilisation of the forest resources of Northern Nigeria.

2. During the year under report the newly created Sardauna Province was reorganised by the excision of Dikwa Emirate with an area of 3,800 square miles. Dikwa Emirate was transferred to Bornu Province.

CHAPTER I.—THE FOREST ESTATE

(Standard Forms I and II)

1. The tempo of reservation slowed down during the year under review. This is in part due to the fact that more and more emphasis is now being laid on the scientific management of the forest estate and to the increased demands of the Development Plan. Only 420 square miles of Forest Reserves and Communal Forestry Areas were added to the Forest Estate, bringing the total, as at 31–3–1963 to 25,165 square miles.

2. Although under column 9 of Standard Form I an area of 84,746 square miles is shown as unreserved forest land, it is unlikely that an appreciable percentage of this forest land can be available for reservation. With the population explosion the pattern of the Northern Nigerian landscape is becoming a mosaic of narrow strips of forests interlacing farms and farm fallows. In this matrix of farms, farm fallows and forests it is becoming physically impossible to acquire Forest Reserves and Communal Forestry Areas. The cost per unit area of constituting reserves is becoming very excessive because of the greater lengths of cutlines involved in excising farms and farm fallows.

3. Of the eighty-four thousand seven hundred and forty-six square miles of unreserved forest land there were at the end of March, 1963, 7,379 square miles of Forest Reserve Proposals at various stages of constitution. The Native Authorities putting up these proposals have already signed the inquiry reports of over 2,000 square miles of these proposals.

CHAPTER II.—MANAGEMENT AND SURVEY

(Standard Form III)

1. At the end of the year under report 2,045 square miles of the Forest Estate was under some form of management plan and of this total only 292 square miles were under an intensive form of management. The total area of the Forest Estate under plan forms only 8 per cent of the constituted Forest Reserves and Communal Forestry Areas and just under 2 per cent of the total forest lands of Northern Nigeria. But with the introduction of the Development Plan and with the creation of the Forest Management Cadre within the Forestry Division it is expected that many more square miles of the Forest Estate will be brought under scientific management.

2. Topographic and other (including soil, vegetation and site reconnaissance) surveys were conducted during the year. These surveys covered a total of 713.4 miles.

3. *Mapping.*—Copies of the aerial photographs taken by the Canadian Technical Assistance Team in 1961 over half degree Standard Sheets in Ilorin. Kabba, Benue and Niger Provinces were purchased from Messrs Canadian Aero Service Limited, for use by the Management Cadre, Guinea Zone. The coverage of the Forest Estate in Kabba and Igbirra Divisions is complete but unfortunately there are omissions from Igala Division where all the Forest Reserves covered by the Northern Nigeria Timber Company Licence are located.

4. These aerial photographs are used extensively by the Management Cadre in the preliminary reconnaissance for Teak sites.

5. In January, 1963, discussions were held with Mr Miller of the Directorate of Overseas Surveys, Tolworth, England and arrangements were made for selecting a series of aerial photographs covering a Forest Reserve having both high forest and savanna so that the Directorate of Overseas Surveys could prepare a 'Type Map' using all the aids at their disposal. Bunu Native Authority Olle Forest Reserve was selected for this study.

6. *Timber Concessions, Management of.*—(*a*) Mr Eiritz continued to work in Quinquennial Block III which he entered in the early part of 1962. A total of 34,000 cubic feet of timber was removed during the year and of that total over half consisted of *Khaya grandifoliola.* The slight increase in production over the preceding year may be attributed to the sale of the licensee's Igala concession allowing him to spend a greater part of his time at Dogon Kurmi. It is estimated that the licensee is about two and a half years behind schedule in his working.

(*b*) *The Northern Nigeria Timber Company, Igala Division.*—The Management of this timber company changed hands during the year. Mr and Mrs Eiritz, who were the main shareholders, sold out to the Coast Timber Company in December, 1962. During the year Part II to the Working Plan of the concession area was revised to include the change in the regeneration methods—from Tropical Shelter wood to Group Planting and also to provide for the removal of over-mature trees in advance of the scheduled Annual Coupe.

(*c*) *Kabba Timber Licence.*—The negotiations between the Coast Timber Company and the Bunu, Ijumu, Kabba and Yagba Native Authorities for an exclusive licence over reserved and unreserved lands in Kabba Division continued, but no progress was made. Details for the draft agreements were drawn up by the Ministry.

(*d*) *Abuja Kurame.*—The Scheme of Working for the four Abuja Native Authority Forest Reserves (Yaidna, Dogon Kurmi North, Dogon Kurmi South and Kuduru) continued in operation by Alhaji Sidi and H.C. and D.K. Loomes Limited. The scheme laid down the exploitation of these reserves by pit-sawing and the regeneration of the felling sites. The yield control is by minimum felling girth of 11 feet g.b.h.

7. The following notes, by provinces, indicate the more important management developments during the year under review:—

Adamawa Province.—About five square miles, mainly of Communal Forestry Areas, were under management. The bulk of this is in Muri Division where local conditions make it imperative for the inhabitants to depend on these Communal Forestry Areas.

Bauchi Province.—The soil surveys of Fobur and Ran Forest Reserves were conducted during the year and at the end of the year there were 125 square miles of the Forest Estate under some form of management. The various Native Authorities in the province are taking more and more interest in the exploitation of the Forest Estate. Bauchi Native Authority wishing to exploit more Forest Reserves have increased the tariff on fuel hoping that this will make it uneconomic to sell wood from outside reserves. If necessary the Native Authority will increase the cost of the fuel permits still further.

Benue Province.—Altogether a little less than 6 square miles of the Forest Estate was under management. Early in the year about 3 square miles of Kurame in the north end of the Doma Forest Reserve was enumerated and Stock Maps prepared. Exploitation in the Ahina Kurmi by five contractors working in separate blocks of strips continued.

Bornu Province.—An area of about six square miles of the Forest Estate was under planned management.

Ilorin Province.—Only a little over half a square mile of the Forest Estate was under planned management. It was not possible to implement the proposed Working Plan for the Ilorin high forest areas of Ipetu, Odun and Esie Forest Reserves. The exclusive concession over these reserves given, without reference to the Forestry Division, by the Ilorin Native Authority to Alhaji Bolare was withdrawn at the beginning of the year.

Kabba Province.—There was only one Forest Reserve with an area of less than a square mile under planned management in the province. This was the Igbirra Native Authority Okene Water Works Forest Reserve.

Kano Province.—There was a decrease in the area under planned management—from 80 to 64 square miles. This decrease is generally believed to be due to the removal of control over unreserved lands and the modification of the farm tree rules resulting in less demand for fuel coupes to be opened in the Forest Estate.

Katsina Province.—Of the 614 square miles of the Forest Estate under management 472 square miles are under grazing management. The responsibility for the implementation of the grazing scheme lies with the Native Authority, Provincial Veterinary Officer and the Provincial Forest Officer with the advice of a representative of the United States of America Agency for International Development. During the year the 'mashekari' system was

abandoned in the grazing reserves and the Fulanis were allowed to camp anywhere within the ranges. Each range was divided into four sections, each being grazed for a period of three months and then closed for nine months, thus a system of rotational grazing was introduced to the Ruma/Kukar Jangarai Forest Reserve. Of the many plantations which at present have no legal backing only Katsina City Wall plantation was opened to exploitation. A working plan was prepared prescribing felling in a series of strips with a rotation of eight years and two working circles.

Niger Province.—There were no additions to the 12.33 square miles of the Forest Estate under planned management but exploitation by the ticket system, direct labour or by contract labour continued near Bida, Abuja and Kontagora. No new coupe was opened in the Minna Fuel Plantation.

Plateau Province.—No coupes were issued for felling in Rumfan Gwamna, Gurum and Jere or Langai and Gindiri Working Plan areas. In the case of the two former areas this was due to the failure of the Native Authority to co-operate with the department and in the case of Langai and Gindiri Forest Reserves because the previously issued coupes were uncompleted. All reserved Kurame in Mada District of Akwanga Federation Native Authority have now been surveyed and will be stock-mapped prior to the production of a working plan to cover the whole group. At the end of the year there were about 60 square miles of the Forest Estate under planned management.

Sardauna Province.—There was no planned management of any part of the Forest Estate. Mubi Communal Forestry Areas 1 and 2 were in the process of alteration because of Government buildings and the coupes as previously demarcated will have to be re-done as buildings have already been sited in a number of these coupes. During the course of soil surveys in the six Mambilla Reserves—Maisamari, Nguroje, Gembu, Kakara, Dorofi and Mayo Ndaga—45.14 miles of chain and compass traverse were done. There was also four miles of survey in connection with the determination of the limits of the stocked areas in the above Forest Reserves.

Sokoto Province.—About 981 square miles of the Forest Estate are under management and of these 895 square miles are under grazing management. As in the grazing scheme in Katsina Province some of the ranges in the Zamfara Forest Reserve have been sub-divided for rotational grazing.

Zaria Province.—Soil surveys were carried out in the Sanga River, Kurmin Male, Kurmin Bi and part of Kurmin Dawaki Forest Reserves. These surveys were of an elementary nature and are designed to give an indication of the extent of plantable land. Enumeration surveys were undertaken in Nindam and Bakin Kogi Forest Reserves. In Chanje Forest Reserve simple exploitation, designed to remove over-mature trees, continued. The contractors, pit-sawyers, found that the fourteen feet girth limit was uneconomic and so this girth limit was reduced to eleven feet. Some difficulty has been experienced in getting the sawpits properly filled-in after exploitation.

This is likely to continue and it may be necessary to increase the price of timber and fill in the pits using departmental labour. At present the fees on timber are 1*s*-4*d* per cubic foot (true) for first grade timber and 8*d* a cube for defective timber.

CHAPTER III.—COMMUNICATIONS, TRANSPORT AND BUILDINGS

1. *Communications.*—Although great strides are being made in the country as regards the improvement of road and rail communications, a lot of the Forest Estate still lies remote from the general road and rail system. Occasional road washouts create difficulties in getting to even those parts of the Forest Estate which lie by the general road and rail system.

2. The Bornu Railway Extension line reached Gombe and goods and passenger services were available by December. This has proved extremely useful in moving staff and equipment through to Gombe.

3. *Transport.*—The Forestry Division continues to be ill-provided with Government transport. During the year under review the Division had only six Land Rovers, three lorries and one Unimog. Of these one lorry belongs to the Forest School, Naraguta, one Land Rover to the Game Unit, one Land Rover, one Unimog and two lorries belong to the Management Cadre. It can be seen quite clearly that the transport commanded by the Forestry Division is insufficient to meet the requirements of the thirteen provinces, the Forest School, the Game Preservation Unit and the Management Cadre.

4. *Buildings.*—The construction of the Provincial Forest Office, Bauchi, started in the second half of the year and was near completion by the end of the year.

5. The Game Preservation Unit moved into the Government quarters GPB No. 3, a house formerly occupied by the late Regional Game Warden. The Regional Game Warden reports that a number of minor repairs and modifications are necessary but since the building is spacious it can well do for both office and the natural history museum.

6. In Kano with the recruitment of more Soil Surveyors and Silvicultural Assistants the present office accommodation is proving inadequate. There is, however, a plan to convert the garage attached to the new offices into a drawing office but, nevertheless an extension will be necessary.

7. During the year the Provincial Forest Officer, Katsina Province, had to vacate the three offices which this Division had in the Provincial Office block and convert a block of stores which was then fitted out as a three-roomed office.

8. There is as yet no office accommodation in Sardauna Province. The Provincial Forest Officer continues to share the 20′x15′ room of the Provincial Veterinary Officer. New office accommodation is required at Mubi, Sokoto, Ilorin, Lokoja and Makurdi.

CHAPTER IV.—FOREST PROTECTION
(Standard Form V)

1. *Against Man.*—The writer is of the opinion that Standard Form V does not bear much relation to the number of forest offences committed by men. The Standard Form shows that the number of offences committed inside the Forest Estate dropped from 1,042 in 1961-62 to 691 in the year under report, i.e., a drop of 351 offences. On the other hand offences outside the Forest Estate increased by 91. Because of the nature of the collection of the data for the compilation of this Standard Form and because of the fact that the form does not truly reflect the number of offences committed both inside and outside the Forest Estate, it is being contemplated that Standard Form V should be discontinued. Nevertheless Provincial Forest Officers will continue to ask for returns of forest offences from the Native Authorities but no Standard Form V shall be included in their Annual Reports. They should, however, mention in the text of the Annual Reports any offence or offences worth recording.

2. Although there is an overall decrease in total offences, from 2,358 in 1961/62 to 2,098 in 1962/63, certain provinces show increases in the offences committed. It has been put forward that one of the reasons for increases in forestry offences is due to the fact that the Alkalis treat forestry offenders leniently.

3. In Benue Province the amount £1,129 shown as fines is mainly from fines imposed on people bringing in forest produce from Eastern Nigeria where the provisions of the Forestry Ordinance (Chapter 75 of 1948 Laws of Nigeria) have been lifted from lands outside the Forest Estate. This act results in forest produce, especially timber, taken from lands outside the Forest Estate of Eastern Nigeria not being subject to pass-hammering. As a result of this it is always difficult to determine whether the unhammered timber in the markets of Benue Province is genuinely brought from Eastern Nigeria or illegally taken from either within the Forest Estate of Northern Nigeria or from lands outside the Forest Estate which, in case of Northern Nigeria, are still subject to the provisions of the Forestry Ordinance. The Forestry Services of Eastern Nigeria have been requested to assist by either re-introducing the provisions of the Forestry Ordinance over lands outside the Forestry Estate of the region or to devise some means whereby such produce as timber taken outside the Forest Estate shall be subject to hammer marking.

4. *Against Fire.*—Because of the size of the Forest Estate and the small patrolling staff and because of the socio-economic conditions existing in the country where fire is the only effective means available to the farmer to keep his land clean and also to produce palatable grass for his animals, the Forestry Division is forced to adopt the policy of early burning in the reserves generally and only attempt to completely fire protect the small areas of plantations.

5. Fire got into the 1962 stocked area of the Mayo Ndaga Eucalyptus Plantation in the Gashaka/Mambilla Native Authority area of Sardauna Province

and did damage to about five acres of the plantations. The damaged Eucalyptus plants were cut back and it is reported that about 55 per cent of the plants recovered. Fire also got into the Kano Plantation and the Dan Sosia Giginya Plantation doing considerable damage.

6. *Against Insects.*—The following reports of insect damage were received during the year:—

Bauchi Province.—Two un-identified insects, one attacking *Anogeissus leiocarpus* in Bauchi Native Authority Forest Reserve, Magama Forests, and the other defoliating *Khaya senegalensis* in the Bauchi Government Residential area. The West African Timber Borer Research Unit has been asked to investigate the former incident.

Benue Province.—The attack by *Phytolyma lata* on young *Chlorophora excelsa* still continues but *Chlrophora regia* is still free of the gall. White ant attack of *Eucalyptus* in Odoba and Bush-Cow Island plantations was treated with Dieldrex. It is reported that *Eucalyptus torelliana* seems to be immune to the attack. Severe cricket attack on *Cedrela odorata* seedlings in the nursery a few weeks after germination was observed.

Kabba Province.—An unidentified grub has been found defoliating the seedlings of *Terminalia superba* at Olle and Aeade.

Niger Province.—Dr H. Roberts of the West African Timber Borer Research Unit, Ibadan, investigated the report of pinhole borers in living trees of *Aubrevillea kerstingii* and *Piptadeniastrum africanum* in the Abuja Native Authority Forest Reserve, Yaidna Forests, and the following are his comments:—

> 'Of 27 standing trees (all over 7 feet girth at breast height) that were examined two individuals showed very heavy attack by pinhole borers (*Doliopygus chapuisi* and *D. subditivus*, Col. Fam. Platypodidae). Most of the holes were very short and none contained living beetles, the exudation from the tree killing all the attacking insects. In many cases the exits of the tunnels had been closed by growth of the tree and since growth occurred after attack it suggests that the damage was done during the last rainy season.'

At the moment only *Aubrevillea kerstingii* and *Piptadeniastrum africanum* appear to be susceptible to the attack while there was no evidence of attack on *Khaya grandifoliola*, *Khaya senegalensis*, *Triplochiton*, *Chlorophora excelsa* or *Pycnanthus angolensis*. The longest holes made were in the order of 8.5 cms but the majority of the holes were in the order of 3-4 cms and there was no sign of transverse tunnels on the stumps. Dr Roberts concluded that this forest is, for the first time, being subjected to considerable physiological strains and the trees are becoming attractive to pinhole borers.

Although such attack on living trees may increase in newly opened areas it is unlikely that the attack will be serious. The pinhole borers will not breed in living trees.

Plateau Province.—The W.A.T.B.R.U. has identified the caterpillars of the moth defoliating *Eucalyptus*, mainly *Eucalyptus camaldulensis* as *Nadasia amblycalymma*. As the Eucalyptus are not indigenous to Nigeria it still remains to be discovered what is the normal food crops of this moth. Two un-identified caterpillars, one defoliating *Syzygium* and the other *Isoberlinia* have been collected and forwarded to Ibadan for identification.

Sardauna Province.—White ant attacks on Eucalyptus have been recorded.

7. *Other Forms of Damage.*—Two un-identified root fungi have been reported. In Plateau Province a root fungus was found in one of the Minesland Reclamation Areas planted up with Eucalyptus and in Kabba Province a fungus was found attacking *Gmelina*, Teak and a few *Triplochiton* in Aeade. In Kano Fuel Plantation *Luffa cylindrica* and *Acacia ataxacantha* tangles are on the decline. These tangles are now up-rooted and burnt while at the same time *arboricides* are being tested on the tangles. Loranthus in Katsina and Bornu Provinces still continues to be a serious pest.

8. Mice damage has been reported on the pines now being tried out on the Mambilla Plateau.

CHAPTER V.—SILVICULTURE
(Standard Form VI, Parts I and II)

1. Some doubts have been expressed as to the desirability of closer spacing in plantations in order to achieve an early closure of canopy thus greatly reducing the cost of weeding. It is argued that in marginal sites, especially in the Sudan Zone, it is doubtful that the ideal of a closed canopy will ever be achieved. On the basis of this there is now a trend in going in for wider planting distances and the system of planting at 10′x10′ on sites of high potential and 15′x15′ on sites which are marginal or on those sites which are completely unknown is used in the drier parts of the country.

2. During the year under review 5,793 acres were brought under regeneration and 5,551 acres were completely regenerated in the same period, thus bringing the total area of completed regeneration as at 31st March, 1963 to 131,242 acres. Of this grand total all except 115 acres were regenerated by coppice. The 115 acres were regenerated by enrichment plantings of High Forest and assisted natural regeneration. Regeneration under the Shelterwood System continued in 417 acres in Jema'a Division of Zaria Province.

3. *Plantations.*—These include the afforestation of land hitherto not carrying forest crops of any value and the replacement of natural forest crops by plantations crops. A total of 4,440 acres of newly created plantations were added to the total of 15,338 acres of plantations existing on 1st of April, 1962. At the same time, through failures and wrong classifications, an area of 2,712 acres of 'plantations' were excluded during the year, thus bringing the total area of established plantations in Northern Nigeria as at 31st of March, 1963 to 17,066 acres.

4. The main points of silvicultural interest recorded during the year's work are as follows:—

(*i*) *Adamawa Province.*—Only 5 acres of plantations were established during the year, using *Dalbergia* and *Eucalyptus*. In the past many genera had been tried in this province but, through a sort of natural selection process, the genera have now thinned down to *Dalbergia* and *Eucalyptus*.

(*ii*) *Bauchi Province.*—The use of polythene posts was extended to all the Native Authority nurseries in the province.

The policy of favouring *Cassia siamea* instead of *Albizia lebbek* in plantations in Bauchi Province has been questioned, but the Provincial Forest Officer in charge of the province stated that the latter species is regarded as a weed. The growth of *Cassia* in Kumo Plantation is probably as good as that obtained anywhere in the Sudan Zone. Where the two species are grown in a mixture the whole plantation becomes rapidly choked by whippy stems of *Albizia* which also overgrows the *Cassia* causing the stems of *Cassia* to bend into grotesque shapes. Where the seedlings of the *Albizia* are not controlled in the first year it becomes almost impossible to do so in later years. Kanawa Plantation is a classic example and the policy there now is to have a regular thinning regime favouring the better stems of the *Cassia*.

Another reason why *Cassia* as a plantation species is preferred in Bauchi Province is that the market very readily accepts the poles of this species.

In order to test stumped Neem and polythene-potted Neem alternate rows of potted and stumped Neem were planted in Sumamuro Plantation. Already the superior survival and better form of the potted Neem stands out. It is not certain, however, that the better initial form of potted Neem is persistent as a small plot established in 1961 appears to be becoming of less markedly better form than the surrounding stumped Neem.

(*iii*) *Benue Province.*—A total of 106 acres of plantations were established during the year within the forest estate. In addition enrichment planting was continued in a block of 79 acres of 'kurmi'. The creation of plantations for fuel and poles takes place mainly on savanna sites, with those on high forest sites having as their ultimate object of management the production of timber.

The creation of plantations by the taungya method continued to be successfully demonstrated in the Gboko plantations. The system is also being used in Ihugh where rice farmers are being allowed to clear plantation sites.

In Shangev Tiev Forest Reserve the following species were planted in May, 1962:—

Tectona grandis,
Chlorophora excelsa,
Mansonia altissima,

Entandrophragma angolense,
Eucalyptus citriodora,
E. multiflora,
E. deglupta,
Cedrela odorata,
Terminalia ivorensis,
Nauclea diderrichii, and
Mitragyna stipulosa.

Because of the low lying nature of the site the areas near the river got flooded and almost all of the *Terminalia ivorensis*, *Nauclea*, and *Mitragyna* together with *E. citriodora* and *E. deglupta* died. The growth of Teak was vigorous although it was not as great as in the P. 61 area. This might be due to the increased espacement 7'x7' instead of the 6'x6' in the P. 61 areas. At the end of the year growth was nearly 12 feet in height but the pattern is patchy. Little or no growth took place in the *Chlorophora* and the *Mansonia* areas and the former is heavily galled.

One interesting feature is that in the areas of failure *Naucla diderrichii* is appearing naturally.

From the results so far obtained it would appear that this is a Teak site and next year the planting site will be devoted to Teak and only a very small area will be devoted to experimental purposes.

In Doma Forest Reserve 18 saw-pits, which had been filled by the timber contractors, were planted with groups of *Chlorophora excelsa*, *C. regia* and *Triplochiton scleroxylon*. *C. excelsa* was heavily galled and *Triplochiton* seems to show the most vigour.

(*iv*) *Bornu Province*.—The acreage of the plantations in the province was increased by 167 acres during the year under report.

(*v*) *Ilorin Province*.—Planting was considerably curtailed previous to the commencement of the following year of an intensive and integrated programme of species trials. Thus small scale plantings only were carried out at Moshi River Extension proposal, Sobi Fuel Forest Reserve, Olomu Forest Reserve, Ipetu Forest Reserve and Lafiagi Forest Reserve, making a total of 28 acres only.

Efforts at a number of nurseries to raise stock of *Cedrela odorata*, *Mansonia altissima*, *Anacardium occidentale* and *Trema guineensis* were unsuccessful probably due to bad seeds.

(*vi*) *Kabba Province*.—Increasing effort in the creation of timber and pole plantations using different techniques in both high forest and savanna continued during the year. At the end of the year 121 acres had been established.

About 4 acres of Cashew were sown in the Okene Catchment area at a cost of £73. The growth during the year is spectacular and clean weeding proved

to be the answer. The previous year's crop has started to form canopy and vegetational changes are becoming evident.

In the 1961 group planting in the 37 acres of Olle High Forest it is becoming clear that a much greater amount of light is needed for optimum growth. Poisoning of the understorey species was carried out rather badly and the trees did not succumb to the arsenic poisons applied. *Cedrela odorata* seems to be doing well and at the end of the year under report it had attained a height of 8 feet. *Mansonia* was a failure possibly due to the excessive shade under which it was growing and *Nauclea diderrichii* seems to grow satisfactorily in the unshaded stream-side areas.

(*vii*) *Kano Province.*—Besides the 173 acres of plantations created during the year there were also established 242 acres, consisting of species trial plots. District woodlots or plantation extensions on unreserved lands. It is expected that these unreserved lands will be protected either by a forest legislation or by means of Native Authority rules.

In Iggi River Plantation the planting of 28 acres with Teak and *Gmelina* failed due to flooding.

Two methods of enrichment plantings were done during the year. One method consisted of planting potted plants under the shelter of existing bushes with no previous ground preparation and no further protection. Many Communal Forestry Areas which carry poor quality vegetation were treated using this method. The other method consisted of clearing strips at 15 feet intervals and then cultivating these strips using either tractor with implements or native hoes adapted for breaking up the top soil. At the onset of the rains these strips were planted using both potted and stumped neem seedlings at 15 feet intervals between the plants. Twenty acres each in Birnawa and Aguran Galadima were treated by this method. These areas were later fenced against cattle using two strands of barbed wire.

(*viii*) *Katsina Province.*—It was in this year that Katsina Province participated in Project 1, Amelioration of Fuel Shortage in the Arid North, of the Six-Year Development Plan. The Native Authorities therefore carried out no planting work but gave financial and personnel aid to the Provincial Forest Officer who, acting as Forest Management Officer, supervised the plantation work carried out by Government Junior Staff. Altogether 120 acres of plantations were established. All planting was done at 15 feet by 15 feet espacement.

Comparing the results of the last two years it is evident that better results are obtained by using potted plants and planting out early. Late planting usually results in great failures. The pot plants are much more adaptable to intensive plantation work and with them early planting is possible. With this in view the Native Authorities in the province have been advised to spend their money on compensation for good land and on buying fencing materials. The

Management Cadre will then do the soil surveys, rear the plants and organise the planting with the supervisory help of Native Authority staff.

(*ix*) *Niger Province.*—For the first time group planting of *Triplochiton* and *Mansonia* was started in some of the High Forest of the province. The technique consists of deep cultivation, with mattocks, of a cleared site and planting of five trees at 3 feet intervals. The idea is proving successful but there is the problem of having the right amount of light to reach the forest floor.

(*x*) *Plateau Province.*—The Bukuru Central Nursery raised a total of 600,810 seedlings during the year and of this number 470,450 were *Eucalyptus camaldulensis*. The rest of the trees consisted of the following species:—

E. robusta	36,640
E. rudis	19,240
E. citriodora	10,360
E. saligna	7,400
E. maculata	6,660
E. torelliana	7,360
E. (un-named)	33,660
Melaleuca	4,440
Ornamentals	4,600

The Minesland Reclamation Unit took 347,740 seedlings and the Jos Native Authority used 232,765 seedlings. Besides these 10,240 seedlings were sold to the public, realising £355. The cost of production was estimated at £5,743, giving approximately £9–11*s*–0*d* per 1,000 seedlings. Of this, labour accounted for about £5–12*s*–0*d*. The Ministry of Agriculture contributed £3,381 to the Bukuru Central Nursery scheme.

Altogether 860 acres were planted in the province and of this 239 acres were on the mines reclamation areas. Ninety-four acres of lands awaiting constitution as Communal Forestry Areas were also planted.

In Pankshin Division the sixteen Native Authority nurseries raised 70,000 plants. In the eastern parts of this Division where conditions are drier than in the western, *Eucalyptus camaldulensis* was used entirely, but in the western nurseries *E. robusta* and *E. saligna* were grown, and planted on the basalt soils of Fasakai, Daffo and Sha.

In Jos Division, *Eucalyptus robusta* was planted in areas with basalt soils which lie in the western and southern parts of the Division and enjoy a greater rainfall than the central and eastern parts of the Plateau. This species has two advantages over *E. camaldulensis*. It is straighter and heavier crowned and more able to suppress grass in plantation, but it is more liable to termite damage.

Die-back of the leader has been observed towards the end of the dry season in several species of eucalyptus during the first and second years of growth.

From trial applications of sodium borate to these trees it appears possible that this die-back is primarily due to deficiency of boron rather than to sheer lack of soil moisture. *E. rudis* is one of the species which may suffer from this defect, but it is more pronounced in *E. citriodora* and *E. maculata*. It is another point in favour of *E. camaldulensis* that it seldom shows any die-back, and in fact can continue to grow longer into the dry season than any other species. No beneficial effects were obtained with *E. torelliana* when treated at Bukuru with boron and this species is one of the worst affected with the die-back.

In 1962 mechanical cultivation was used for the first time in the afforestation of grassland in Jos Division. Forty-four acres in five Communal Forestry Areas were ploughed with a Ferguson 35 diesel tractor, drawing a 2-disc plough, and planting was done at a spacing of 10″x10″ to allow tractor cultivation after planting. One such cultivation was done in the dry season using a 10-disc harrow but this was not as effective as a previous cultivation which was done with a heavy-duty 5-tine field tiller.

Where planting is done within twelve months of reclaiming the minesland it is not necessary to cultivate between the rows, but in older reclaimed areas (reclaimed in the middle of the 1950's) there is a strong growth of grass which must be cultivated for the first two years after planting the trees if they are to develop properly. Otherwise they go into check and may never recover vigour.

(*xi*) *Sardauna Province.*—Only 67.5 acres of plantations were established during the year. In preparation for the launching of the Mambilla Afforestation Project in 1963 the government established six nurseries each producing 10,000 potted plants. In addition to these 60,000 plants, one of the nurseries had a stock of 2,500 potted trial species of *Pinus radiata*, *P. patula*, *P. caribaea* and *Thuya orientalis*. The Gashaka/Mambilla Native Authority also raised 27,000 plants in four nurseries for the 1963 planting season.

(*xii*) *Sokoto Province.*—Planting both inside and outside the Forest Estate continued. A total of 240 acres were planted during the year under review.

(*xiii*) *Zaria Province.*—Planting of seven acres of *Eucalyptus multiflora* in Kabama and Zaria Fuel Plantations was done during the year. The growth was moderate and termite damage had not been excessive. Three acres of Teak were planted in Kurmin Male on an intermediate type site of closed forest which had been cleared for firewood.

During the year under report 100 acres and 20 acres in Kurmin Kwagiri and Chanje Forest Reserves respectively were group planted at an espacement of 66 by 33 feet, giving a stocking of twenty groups to the acre.

CHAPTER VI—PRODUCTION AND TRADE

(Standard Forms VII, VIII and IX, and Appendix I—Trees Felled)

1. The production of the various forest products shown in the Standard Forms mentioned above only refer to forest produce taken on permit or under a concession.

It by no means reflects the total forest produce of the country. It can conveniently be said that only a fraction of the forest produce taken in the forests of the country is recorded in these Standard Forms.

2. In all the three Standard Forms there are fluctuations in the quantities of the forest produce taken. This can only be explained by the inefficiency of collecting the data for the Standard Forms. When one considers that the population of the country is increasing one is led to believe that the total forest produce taken should proportionately increase, but this is not the case in some of the forest produce recorded in the three standard Forms under this chapter.

3. In the absence of any reliable statistical data on the prices of the forest produce taken the total value of the out-turn of timber and fuel, as shown under column 13 of Standard Form VII is an arbitrary one and the total value is arrived at as follows:—

Log Wood each 5*s* per cubic foot;
Sawn Timber each 10*s* per cubic foot;
Hewn Wood each 5*s* per cubic foot;
Split and Round Woods at 1*s* per cubic foot;
Firewood each 20*s* per 100 cubic feet;
Charcoal each 4*s* per cubic foot.

4. *Minor Forest Produce.*—Standard Form VIII which gives the amount of minor forest produce taken under permit does not reflect to any extent the total amount of minor forest produce taken in the Forest Estate and outside the Forest Estate. Most of the Forest Reserve orders give rights to the inhabitants to take free of charge, many minor forest products and these are not recorded in this Standard Form. The writer considers that this Standard Form should not be included in either the Provincial Annual Reports or the Annual Report on the Forest Administration of Northern Nigeria, but, nonetheless, the Provincial Forest Officers should continue to ask for returns of minor forest produce taken from the Native Authority so that if there is any item of special interest, such as the Gum Arabic in Bornu or the Palm Wine in Kabba, it may be mentioned in the section of the text which deals with production and trade.

5. All the Sawmills in the country did not work to full capacity. In Kabba Province the management of the Northern Nigeria Timber Company was taken over by the Coast Timber Company from the former Director and Manager, Mr B.L. Eiritz. As a result of this change of management the mill did not work to full capacity and there were months during which work in the mill did come to a standstill. At the same time the log export side of this concession ceased.

6. In Ilorin Province the two sawmills, one owned by Alhaji Bolare and the other by Chief Oyinloye worked intermittently. In the case of Bolare this concession had to be withdrawn.

7. During the year under review a Match Factory, the Crown Match Company. was established. It is to be run on imported Poplar but there is every likelihood of the company going over to either *Triplochiton* or *Gmelina.*

CHAPTER VII.—RURAL PLANNING AND DEVELOPMENT

1. *Rural Planning.*—The main points of interest in some of the provinces are given below:—

(*i*) *Bauchi Province.*—Soil erosion problems in Gombe Division are being tackled by the Ministry of Agriculture and the Ministry of Animal and Forest Resources. The Forestry Division will supply about 10,000 seedlings of *Parkia clappertoniana*, *Acacia albida* and *Prosopis africana* for planting along the erosion lines.

The recommendations of the Institute of Agricultural Research, Ahmadu Bello University, Zaria, Soil Survey Team, which completed a soil survey of Gombe Emirate, are expected to be published soon. Suffice it to say that where the Soils Team recommended land for reservation there was usually a Forest Reserve there already.

(*ii*) *Bornu Province.*—The main rural development in the province is the drilling of bore-holes. There are now 210 completed bore-holes in Bornu and Dikwa Divisions of Bornu Province. The Forestry Division is following this development with very keen interest and it is the intention of the Forestry Division to establish Forest Reserves by these bore-holes. So far a number have already been established.

(*iii*) *Ilorin Province.*—The construction of the Niger Dam at Kainji is bound to have a great effect on the rural development of Borgu Division. When the dam is completed many villages, including Bussa, will be flooded. The present Wawa to Bussa motor road will also be flooded. A relief motor road, Wawa to Luma, has been surveyed and the proposed relief road passes through the Borgu Game Reserve. This raises the problem of having a public highway through a game reserve and it will, therefore, be necessary to adjust the boundaries of the game reserve to exclude the public highway.

As a result of the impending flooding of the villages a re-settlement scheme is being formulated and the Forestry Division will be engaged in creating fuel and poles reserves and plantations for the new communities and also in providing seedlings for amenity plantings in the new villages.

Besides the flooding of the villages and roads, it is now confirmed that the following Borgu Native Authority Forest Reserves will also be flooded:—

(*a*) Bussa No. 1 Plantation;
(*b*) Bussa No. 2 Plantation;
(*c*) Bussa Forest Reserve, including River Menai Plantations;
(*d*) Doro River Forest Reserve (about 50 per cent), including the River Timo Plantations.

The Department of Federal Forest Research, Ibadan, completed a survey of timber resources on Foge Island and its environs. These areas will be flooded when the construction of the Niger Dam is completed. The Forestry Division is contemplating salvaging any economic species in these areas and the survey was conducted to enable the Forestry Division to assess the potentialities of the areas. It is envisaged that some form of portable sawmill will be established either on Foge Island or near the island in order to exploit the economic species of the area.

The Nigerian Sugar Company is establishing a sugar scheme at Bacita, near Jebba. A second class township is now developing at Bacita and it may be possible that fuel, pole and timber supply problems will crop up in the near future.

(*iv*) *Kabba Province.*—Two private companies are proposing to start work on the marble and iron ore deposits in the Agbaja Plateau area of the Kwara Division. The Nigerian Marble Company, Limited, are anxious to start work on the outcrop of marble which covers some 205 acres. The marble deposit is very close to Bunu Forest Reserve and it may be possible that it extends into this Forest Reserve. It is not yet known to what extent such mining projects conflict with Forestry interests.

(*v*) *Kano Province.*—The Greater Kano Planning Authority which has been up to negotiate the establishment of Metropolitan Kano has posed several Forestry problems, especially those of fuel supply to Kano. A memorandum was submitted to the Greater Kano Planning Authority by the Conservator of Forests (Management), Sudan Zone. The memorandum discussed, among other topics, the following:—

(*a*) Fuel consumption and value per capital;

(*b*) Present supplies of fuel; and

(*c*) Future supplies of fuel.

In considering the future supplies it was revealed that:—

(*a*) the natural bush, consisting of Forest Reserves and Communal Forestry Areas, is of poor quality and can never be a major source of fuel to Kano City;

(*b*) plantations of fast-growing exotic species can prove very profitable in providing good quality building poles which are in great demand;

(*c*) no serious contribution to the fuel economy by either the natural bush or plantation can be expected;

(*d*) the bulk of fuel for Kano comes from mature Farm Trees, of which the protection by legislation has failed;

(*e*) unless steps are taken now to ensure the replacement of the farm trees lost or felled there will be a critical shortage of fuel within the next fifteen years. In the Farm Trees lies the only hope of Kano's rural economy.

The plan submitted by the Conservator of Forests (Management), Sudan Zone, is a practical and positive approach to the fuel supply problems of Kano, but active co-operation of the farmers and the Kano Native Authority is necessary for its success.

(*vi*) *Katsina Province.*—The Provincial Land Use Committee continued to take an active part in the land use planning of the province. Two joint grazing committee meetings were held during the year and there has been encouraging developments of water resources in the Ruma/Kukar Jangarai Grazing Scheme Area. An experiment on rotational grazing will be introduced to three out of the ten grazing ranges in the Ruma/Kukar Jangarai Forest Reserve Grazing Scheme.

(*vii*) *Niger Province.*—It is encouraging to note that more private plantation woodlots are being established in Bida and the neighbouring Emirates. The Forestry Division actively participated in all the Agricultural Shows of the Province.

(*viii*) *Sokoto Province.*—The grazing scheme introduced to the Zamfara Forest Reserve continued to show good progress.

The four Native Authorities in the Province have drawn up, along similar lines to those of the Regional Government, a Six-Year Development Plan. The Forestry Sector is to have, over the next six years, the sum of £55,274 for the development of Forestry in the Province.

2. *Development.*—During the year under report five of the eight projects of the Six-Year Development Plan were launched. These are:—

(1) Amelioration of Fuel Shortage, Arid North,
(2) Acceleration of Planned Management of Forest Reserves,
(3) Pilot Teak Plantations,
(4) Mambilla Afforestation Scheme, and
(5) Office Accommodation.

3. *Amelioration of Fuel Shortage, Arid North.*—During the year there were four Even-Shower nurseries in production for the 1962 planting and also six new ones were constructed for the 1963 planting season. Soil surveys of over 30 Forest Reserves and Communal Forestry Areas were conducted and 600 acres of plantations were established. There were also series of species elimination trials laid out in the Sudan Zone.

4. *Acceleration of Planned Management of Forest Reserves.*—A Savanna Investigation Unit was formed in the Guinea Zone and this Unit carried out soil and vegetation surveys of Forest Reserves in some of the provinces in the Guinea Zone of Northern Nigeria.

5. *Pilot Teak Plantations.*— This project envisages the establishment of a series of two 30-acre units per annum in the provinces of Kabba, Benue, Ilorin, Niger and Zaria (Jema'a Division). So far many sites in these provinces have been

examined for their suitability for the growing of Teak. Nurseries to raise the necessary numbers of Teak seedlings are being prepared.

6. *Mambilla Afforestation.*— To establish six plantation series and with this in view six nurseries with a capacity of 10,000 polypot seedlings each were established on the Mambilla Plateau during the year under review.

7. *Office Accommodation.*— A Provincial Forestry Office was built in Bauchi.

8. *Working Plans.*— There were few working plans but most of the plantations have some form of simple Felling Plans. The position at the end of the year is as follows:—

(*i*) *Bauchi Province.*— Working Plan for the Kumo Plantation was signed by the Chief Conservator of Forests. Clear felling of annual coupes on a ten-year rotation.

(*ii*) *Bornu Province.*— The Working Plan of the Maiduguri Fuel Plantation was signed by the Conservator. Clear felling of annual coupes on a 7-year rotation. Felling plans for four Communal Forestry Areas had been prepared by the Provincial Forest Officer. These have already been forwarded to the Conservator of Forests.

(*iii*) *Ilorin Province.*— The exclusive rights to exploit the Ilorin Native Authority Ipetu, Esie, and Odun reserves, given to Alhaji Bolare of Okeya by the Ilorin Native Authority, in 1961, without any reference to the Forestry Division was finally withdrawn in August, 1962. The draft Working Plan which was first drawn up in 1958 remained in abeyance.

(*iv*) *Kabba Province.*—During the year a revised Part II of the Working Plan of the Northern Nigeria Timber Company was prepared, but when the management of that company changed hands a further revision was made to Part II of the plan. This revised Part II includes the provision for the size of Annual Coupe and also a provision for the removal of over-mature trees in advance of the scheduled Annual Coupes providing that contiguous compartments are worked systematically.

(*v*) *Kano Province.*—Felling Plan for Hadejia Fuel Plantation was signed by the Conservator in 1962.

(*vi*) *Katsina Province.*—Felling Plan for the Katsina City Wall Plantations was approved by the Conservator in 1962.

(*vii*) *Niger Province.*—The Scheme of Working for the four Abuja Native Authority Forest Reserves (Yaidna, Dogon Kurmi North, Dogon Kurmi South and Kuduru) continued in operation by Alhaji Sidi of Izom and H.C. and D.K. Loomes Limited of Abuja.

(*viii*) *Sokoto Province.*—A Working Plan has been drawn up for the Majiya Fuel Plantation but it has not yet been signed by the Conservator.

9. *Silviculture: Sudan Zone.*—In the Sudan Zone the point of study of silviculture is to be able to select useful species for plantations on recognisable sites. To

this end species trials have been established on various sites which had previously been soil surveyed. All the known exotic species and any useful indigenous species are being tested on varying sites. It is considered that no useful information can be obtained in a short time and that the final analysis of survival and growth rates should not be made until at least seven years after establishing the experiments.

10. Studies are also made on the effects of cultivation, planting distances, length of rotation and thinning regimes of coppice shoots.

11. One aspect of silviculture which has previously been neglected is the study of soil nutrients and species requirements. This aspect is now receiving more and more attention. Fertiliser trials are being laid down and trace element trials are being planned for the 1963 planting season.

12. Autecological records for the various exotic and indigenous species are being compiled.

13. *Silviculture: Guinea Zone: High Forest.*—Except for taking advantage of the 1962 *Triplochiton* mast year work on natural regeneration in the high forests and '*kurame*' of Northern Nigeria has virtually stopped. The trend in these areas is towards group, line and intensive planting of the following species:—

Triplochiton scleroxylon
Nauclea pobeguinii,
Chlorophora excelsa,
Mansonia altissima,
Entandrophragma angolense,
Tectona grandis,
Cedrela odorata,
Terminalia superba,
Terminalia ivorensis, and
Khaya grandifoliola.

14. To supplement the above, species trial plots of many Eucalypts have been laid down. Of these *Eucalyptus deglupta* and *Eucalyptus torelliana* have shown great promise.

15. On species and site selection the Conservator of Forests (Management) Guinea Zone reports "experience during the year indicated that high forest sites having good Teak sites, together with lower lying areas plus seasonally inundated areas could be developed with a pattern of Teak on the better drained areas, *Nauclea pobeguinii* and/or *Terminalia superba* or *Terminalia ivorensis* on the lower lying sites, and *Mitragyna stipulosa* in the seasonally inundated areas. All of these species have the merits of being potentially fast growing and easy to rear (with the exception of the germination of *Mitragyna stipulosa* which requires very fresh seed sown on a very damp seed bed). *Triplochiton* should be added as and when seed is available."

16. *Silviculture: Guinea Zone: Savanna.*—The results of a study based on the investigations in Afaka Forest Reserve clearly show that the system of early burning after clear felling seriously accelerates the processes of site deterioration and the degrading of the woody regrowth. Cultivation of a coupe during the first year after felling followed by five or more years of fire protection can result in marked improvement of both the woodland and the site quality. These results are contained in a Technical Note, 'Growth Rates and Regeneration of Northern Guinea Savanna Woodland', produced by Mr R. H. Kemp, a Senior Research Officer of the Department of Federal Forest Research.

17. Silvicultural work in the Guinea Savanna Zone of the country is mainly on species trials. These consist primarily of *Eucalyptus.*

18. A study on the effects of flowering on Teak, made in Ilorin Province, showed that flowering on the leading shoot was followed by the development of side branches from axillary buds just below the flowering shoot and that the effective timber length was up to this bifurcation. It was rarely that any one side branch became dominant and even then a definite kink appeared on the stem.

19. The cover crop experiments continued to be carried out. The crops include *Tephrosia candida*, *Stylosanthes gracilis* and *Pueraria phaseoloides*. Of these *Stylosanthes gracilis* has proved the most vigorous.

CHAPTER VIII.—INVESTIGATION AND RESEARCH

1. Basic Forest Research is the responsibility of the Department of Federal Research. At the present stage of development of Forestry in Northern Nigeria it is difficult to draw a clear distinction between reporting on Silviculture (Chapter V) and Investigation and Research (Chapter VIII).

2. The following are the main items of interest on investigation and research reported in the provinces:—

Adamawa Province.—Species trials have been carried out in both Namtari Forest Reserve and Zinna Plantations of which no accurate records could be found in this office. It is expected to carry out a well-organised species trial of *Eucalyptus* species to meet the challenge of Zinna Plateau.

Bauchi Province.—(*a*) The height measurement of the *Cassia siamea* plot in the Jauro Tukur Forest Reserve continued to be made and it was reported that the growth appeared to be remarkably even.

(*b*) Species trials on the colluvial site at the Bauchi Native Authority Ran Forest Reserve were laid down. The species consisted of *Khaya senegalensis*, *Cassia siamea*, *Azadirachta indica*, *Eucalyptus camaldulensis*, *E. gomphocephala*, *E. occidentalis*, *E. rudis*, *E. tereticornis*, *E. torelliana* and *E. salmonophloia*. Fifty potted plants each of the Eucalypts with many, both open-rooted and potted, plants of the first three species were planted on either side of the Rafin Tagwaye in

Ran Forest Reserve. By the end of the dry season *Cassia siamea*, *Azadirachta indica*, *Khaya senegalensis*, *Eucalyptus camaldulensis* and *E. torelliana* had proved sufficiently successful to warrant giving them a further trial.

(*c*) Using a Galeazzi knapsack sprayer and a 1:200 mixture of Esteron Brush Killer and water plus a wetting agent, one acre of Albizia lebbek regeneration in Kumo Plantation was sprayed. Within two weeks all the regeneration appeared to be dead but by the beginning of the rains it was apparent that only the shoots had been killed and not the roots. The experiment was not successful and so it is cheaper to cut back the regeneration by hand labour than to go to the expense of spraying each year.

Benue Province.—(*a*) *Bush-Cow Island*, an island in the Benue River north-west of Makurdi Township. About two acres were planted with polypot Teak, *Eucalyptus multiflora*, *E. citriodora*, *E. torelliana*. Half of the holes were treated with superphosphate and ammonium sulphate and the remainder have used as a control. Unfortunately the experiment came to nothing as the river rose to an unprecedented height and flooded the area, practically killing all the seedlings.

(*b*) A species trial, consisting of six species of Eucalyptus was laid down in the *Makurdi Fuel Plantation*. The seedlings were raised in the Research nursery at Naraguta, near Jos, and were planted out at an espacement of 8′x 8′ in groups of 20 seedlings per plot and each plot was replicated five times. The following were the species:—

E. rudis
E. maculata
E. deglupta
E. punctata
E. multiflora
E. cloeziana

About 20 per cent of all species in all plots began to show drying up and these plants became almost completely defoliated. Investigations showed no sign of any insect or fungal attack and this was confirmed by Dr Parker, mycologist. It can only be assumed that the reason is connected with lack of soil nutrients and water. Indeed, when the first rains fell at the end of March, 1963, the plants seemed to take on a new lease of life.

Bornu Province.—(*a*) In Pompomari Forest Reserve the planting of *Azadirachta indica*, *Cassia siamea*, *Gmelina arborea*, *Khaya senegalensis*, *Albizia lebbek*, *Dalbergia sissoo*, *Melaleuca leucodendron* and *Eucalyptus camaldulensis* on four dissimilar sites was repeated. These species were planted in a randomised pattern with each plot being replicated six times.

(*b*) An experiment on the comparison of the establishment plantations using mechanical and manual means which was instituted in 1956 was assessed this year. The conclusion arrived at is that post-planting harrowings are the most important ones. For best results three or more harrowings are required in the first year to keep the floor clear of weeds and also to keep the soil in a loose broken state.

Ilorin Province.—(*a*) The trial plots were maintained. A plot of *Eucalyptus camaldulensis* laid down in 1958 in the Bussa Forest Reserve is growing slowly and the trees are decreasing in numbers due to deaths caused by termite attacks.

(*b*) *Gmelina* plantations in Bussa Forest Reserve, River Moshi Forest Reserve and Ipetu Forest Reserve continued to grow strongly. It is hoped that the planting of *Gmelina* on levee sites will be continued to the north of Bussa next year.

(*c*) Three small plots of Teak were planted on unreserved lands on the 'levee' site along the River Oli and results so far obtained are encouraging. It is hoped to extend this planting to the north of Bussa next year. The $\frac{1}{4}$-acre plot of Teak planted in 1961 at Ipetu Forest Reserve was keeping pace with the adjacent *Gmelina* but had not spread crowns so as to form a complete canopy. Two one-acre plots of Teak were established in Jebba Forest Reserve, one on the River Niger 'levee' site and the other adjacent to it. Survival and initial growth were good.

(*d*) The one-acre plot of pure *Chlorophora excelsa* at River Moshi Forest Reserve was partly flooded during the year and about one-third of an acre appeared to be dying. No attack of *Phytolyma lata* has yet been reported. Root and stem grafting material was taken to the Federal Department of Forest Research for grafting and testing of resistance to *Phytolyma lata.*

(*e*) The three acres of *Triplochiton,* cocoa and coffee plots in Ipetu Forest Reserve were abandoned due to fire damage. The area was planted with groups of *Triplochiton.* During the following dry season ample regeneration of *Chlorophora excelsa* and *Terminalia superba* was discovered and protected. In general the survival and growth of the *Triplochiton* were not very good and the area will have to be beaten up next year.

(*f*) Temporary sample plots were demarcated in P. 54, P. 55 and P. 56 *Gmelina* plantations at the Olomu Forest Reserve and a 100 per cent enumeration was carried out in these plots. A stem analysis of a sample mean tree in one of the plots clearly showed a correlation between rainfall and volume increment. Annual rings are clearly visible in the sapwood as a single row of vessels, but are difficult to see in the heartwood which arises at about five to six years of age.

(*g*) Grafting and budding materials for tree breeding experiments were collected from three elite *Gmelina* trees at the Olomu Forest Reserve and sent to the Federal Department of Forest Research, Ibadan.

Kabba Province.—The Iroko Gall Control investigation at Alade was abandoned during the year. The results obtained are inconclusive.

Kano Province.—No new investigations were initiated during the year. There is as yet no conclusion drawn from the application of tree killer on *Acacia ataxacantha* in the Kano Fuel Plantation. Although all stumps treated seemed to have died, it is, however, possible that the root runners might shoot up after the rains.

Katsina Province.—The Operation Umbrella has been closed down. The Jatropha which was to have given the umbrella effect to the Neem was outstripped by the Neem and the Neem itself became the umbrella.

Niger Province.—Sites for two separate plots were selected in the Shakwatu Forest Reserve for the purpose of establishing *Chlorophora excelsa* and *C. regia* plantations and to investigate the attack by the Iroko Gall bug. One of the plots is in high forest and the other in the neighbouring savanna. The plots which are an acre each were cleared of all vegetation, except for some big trees which may have to be poisoned. The initiation of the experiment was held up by lack of seeds.

Plateau Province.—No regional research was carried out in the province.

Sardauna Province.—(*a*) Trials of *Triplochiton* at Gembu Forest Reserve and *Tectona grandis* in Nguroje were complete failures.

(*b*) Sites for the trials of *Pinus radiata*, *P. caribaea* and *P. patula* were cleared during the year and it is expected that these pines will be planted out in the 1963 planting season.

Sokoto Province.—A species trial of the following species was laid down at Majiya Plantation and the results will be assessed in the 1963 rainy season:—

Albizia lebbek
Anogeissus leiocarpus
Acacia nilotica var. adansonii
Acacia nilotica var. nilotica
Acacia albida
Azadirachta indica
Diospyros mespiliformis
Khaya senegalensis
Parkia clappertoniana

Zaria Province.—All the existing investigations were maintained and a new one, Investigation No. 10, was established during the year. This new investigation consisted of nine species of Eucalypts planted in the Kabama Forest Reserve. The species are:—

E. punctata
E. bicolor
E. deglupta
E. maculata
E. rudis
E. multiflora
E. cloeziana
E. tereticornis, and
E. racemosa.

There was very little height growth during the year but losses from termite attacks were few.

CHAPTER IX.—FINANCE

(Standard Forms XI and XII)

1. *Revenue.*—Government revenue which arises from the sale of seeds and seedlings continued to show a decline. There was a fall of £75 from last year's total government revenue of £196.

2. Native Authority revenue went from £54,388 in 1961-62 to £60,926 in the year 1962-63, an increase of £6,538. Although this is a substantial increase in revenue, there is no doubt that if the machinery of collection were more efficient and more determined there could have been a greater rise in the revenue which accrued to the Native Authorities.

3. *Expenditure.*—Government expenditure continued to rise to meet the higher costs of labour and also to meet the requirements of the increased staff to cope with the implementation of the Six-Year Development Plan. The total expenditure rose from £141,160 in 1961-62 to £180,520 during the year under report. This is an increase of £39,360 in the total government expenditure. Equally the Native Authority expenditure rose but only by £6,005. The overall expenditure of the Forestry Service of the region in the year 1962-63 is £371,319 and this is a rise of approximately 11 per cent over the previous year.

4. *Working Deficit.*—The working deficit rose from £271,370 in 1961-62 to £310,272 in 1962-63, a rise of £38,902.

5. *Regional Game Preservation Unit.*—The expenditure of the Unit, shown as £4,608, does not include the amount of money spent by the Unit under the Development Plan. The Unit shows a revenue of £169. This is derived from tourists to the Yankari Game Reserve. It is expected that the revenue derived from this source will continue to rise as more and more people get to know of the existence of the game reserve. At present the fees charged for an overnight stay in the Wikki Warm Spring camp in the Yankari Game Reserve and the charges for transport supplied by the Game Preservation Unit are nominal, but with the provision of better camping facilities there is every likelihood of introducing equitable fees and charges.

CHAPTER X.—STAFF AND TRAINING

(Standard Form XIII)

1. The Government Staff position as at 31–3–63 was as follows:—

Post	*Establish-ment*	*Strength (A)*
Professional Staff:		
Chief Conservator of Forests	1	1
Conservator of Forests	4	4 (*b*)

Senior Assistant Conservator of Forests		5	5	
Assistant Conservator of Forests ...		22	15	
Semi-Professional Grades:				
Forest Estate Officer		4	3	
Technical Intermediate Staff:				
Assistant Forest Estate Officer		7	4	(Total 32 S.F. XIII, Col. 4)
Senior Forest Assistant		4	1	
Forest Assistant, Grade I		7	—	
Forest Assistant, Grade II, III and in-Training		28	21	
Field Staff:				
Rangers		3	3	
Foresters		5	5	
Forest Guards		2	1	
Total		92	63	

Notes.—

(*a*) excluding officers on retirement leave.

(*b*) one supernumerary Conservator of Forests post included.

2. The Forestry Division is still understaffed in the professional and the technical sectors and this is a great handicap in the implementation of the Six-year Forestry Development Plan.

3. During the year under review the following staff changes took place:—

(*i*) *New Appointments* (*Professional*):

Mr R. G. Robertson, A.C.F. 5–7–62.

(*ii*) *Retirements, Resignations and Transfers:*

Mr J. L. Masson, C.F., retired with effect from 5–2–63.

Mr J. Horsman, Assistant Conservator of Forests, retired with effect from 10–8–62.

Mr P. O. Ugowe, Ranger, retired with effect from February, 1963.

Mr Nwofor, Assistant Forest Estate Officer, resigned with effect from 9–1–63.

Mr Udokwu, Forest Assistant, resigned with effect from 17–10–62.

Mr Adejumo, Senior Forest Assistant, transferred to the Forestry Services of Western Nigeria with effect from 5th November, 1962.

(*iii*) *Promotions:*

Mr Fishwich to Conservator of Forests on 5–2–63.

Mr Mackenzie to Senior Assistant Conservator on 5–2–63.

Mallam Jibrin Jia to Regional Game Warden on 1–4–62.

Mallam A. Muhammadu to Forest Estate Officer on 1–12–62.

Mr Adeka to Assistant Forest Estate Officer on 1–4–62.

Mr Abiai to Assistant Forest Estate Officer on 1–12–62.
Mr Forun to Assistant Forest Estate Officer on 1–12–62.
Mr Uyamadu to Assistant Forest Estate Officer on 1–12–62.
Mr Anya to Senior Forest Assistant on 1–3–63.
Mallam Bakare to Ranger on 1–3–63.
Mallam Lapai to Forester on 1–5–62.

Towards the end of the year under report Mr P. C. Randell, E.D., who had been the Chief Conservator of Forests since 23rd of July, 1960, proceeded on retirement leave and Mallam Imam, Conservator of Forests, was appointed to act as the Chief Conservator of Forests, Northern Nigeria.

4. *Training.*—The Forest School, Naraguta, near Jos continued to give short courses to members of the Native Authority Forestry Services. Courses for Forest Supervisors, Foresters and Forest Guards were conducted and also special short soil survey courses for Native Authority Forestry Staff were conducted during the year.

Mr Binga, Forest Estate Officer, proceeded to the Dean Forester Training School, Glouchestershire, England, to do a special one year course in nursery Technique. Mallam A. Muhammadu and Mr Abiai, both Assistant Forest Estate Officers, attended a six weeks' course on Forest Working Techniques. The course which was sponsored jointly by the International Labour Organisation and the Food and Agricultural Organisation of the United Nations was held at the Department of Federal Forest Research, Ibadan.

CHAPTER XI.—LEGISLATION

1. The following Forestry and allied legislation was made during the year under report:—

A—Legislation enacted under the Forestry Ordinance, Chapter 75 of the 1948 Laws:

N.N.L.N. No.	*Subject*
45/62	Bornu Native Authority Kauwa Forest Reserve Order, 1962.
46/62	Bornu Native Authority Kalurwa Forest Reserve Order, 1962.
47/62	Gashaka/Mambilla Native Authority Kamatan Forest Reserve Order, 1962.
48/62	Gashaka/Mambilla Native Authority Maisamari Forest Reserve Order, 1962.
49/62	Gashaka/Mambilla Native Authority Dorofi Forest Reseve Order, 1962.
50/62	Adamawa Native Authority Kamatan (Revocation) Order, 1962.
51/62	Gashaka/Mambilla Native Authority Nguroje Forest Reserve Order, 1962.
52/62	Kontagora Native Authority Dutsin Udara Forest Reserve Order, 1962.
53/62	Fika Native Authority Janga Siri Forest Reserve Order, 1962.

N.N.L.N. No.	*Subject*
55/62	Katsina Native Authority Koda Forest Reserve Order, 1962.
56/62	Bornu Native Authority Karnowa Forest Reserve Order, 1962.
57/62	Bida Native Authority Musa Forest Reserve Order, 1962.
60/62	Hadejia Native Authority Unguwar Jibrin Forest Reserve Order, 1962.
61/62	Biu Federation Native Authority Wuyo Guberunde Forest Reserve Order, 1962.
62/62	Lafiyagi Native Authority Efan Forest Reserve Order, 1962.
63/62	Tiv Native Authority Shamyough Forest Reserve Order, 1962.
66/62	Bornu Native Authority Ardimini Forest Reserve Order, 1962.
67/62	Bornu Native Authority Gajiganna Forest Reserve Order, 1962.
68/62	Hadejia Native Authority Mungurum Forest Reserve Order, 1962.
69/62	Argungu Native Authority Gozange Forest Reserve Order, 1962.
73/62	Hadejia Native Authority Sheya Forest Reserve Order, 1962.
74/62	Bornu Native Authority Gudio Forest Reserve Order, 1962.
75/62	Bornu Native Authority Kingowa Forest Reserve Order, 1962.
77/62	Zuru Federation Native Authority Dutsen Pansi Forest Reserve Order, 1962.
78/62	Bornu Native Authority Dabira Forest Reserve Order, 1962.
109/62	Biu Federation Native Authority Gasi Forest Reserve Order, 1962.
110/62	Idoma Native Authority Bagaji Forest Reserve Order, 1962.
111/62	Kamuku Native Authority Kwongoma Forest Reserve Order, 1962.
113/62	Kontagora Native Authority Ragada Forest Reserve Order, 1962.
114/62	Gashaka/Mambilla Native Authority Mayo Ndaga Forest Reserve Order, 1962.
115/62	Hadejia Native Authority Garun Gabbas Forest Reserve Order, 1962.
119/62	Gombe Native Authority Wawa Forest Reserve Order, 1962.
120/62	Takum Native Authority Takum Forest Reserve Order, 1962.
121/62	Jos Native Authority Abak River Forest Reserve Order, 1962.
123/62	Zuru Federation Native Authority Zugus-Kwak Forest Reserve Order, 1962.
124/62	Adamawa Native Authority Gurin Forest Reserve Order, 1962.
126/62	Wukari Federation Native Authority Agbun Forest Reserve Order, 1962.
128/62	Misau Native Authority Gambara Forest Reserve Order, 1962.
130/62	Kontagora Native Authority Kontagora Forest Reserve Order, 1962.
143/62	Katsina Native Authority Rawayau Forest Reserve Order, 1962.
144/62	Katagum Native Authority Sumamuro Forest Reserve Order, 1962.
145/62	Argungu Native Authority Augi Forest Reserve Order, 1962.
146/62	Lafia Native Authority Kurmin Agyaragu Forest Reserve Order, 1962.
147/62	Lafia Native Authority Adudu Forest Reserve Order, 1962.
149/62	Katsina Native Authority Majifa Forest Reserve Order, 1962.
150/62	Lafia Native Authority Lafia Town Forest Reserve Order, 1962.

N.N.L.N. No.	*Subject*
151/62	Bornu Native Authority Yede Forest Reserve Order, 1962.
152/62	Bauchi/Ningi Native Authority Lame Forest Reserve Order, 1962.
153/62	Bauchi Native Authority Jangu (Dereservation) Order, 1962.
154/62	Bauchi/Ningi Native Authority Lame (Dereservation) Order, 1962.
164/62	Bauchi Native Authority Sumu Forest Reserve Order, 1962.
165/62	Bornu Native Authority Gubalaram Forest Reserve Order, 1962.
166/62	Bornu Native Authority Kesangala Forest Reserve Order, 1962.
167/62	Bornu Native Authority Molai Forest Reserve Order, 1962.
168/62	Biu Federation Native Authority Kwaya Tera Forest Reserve Order, 1962.
169/62	Biu Federation Native Authority Walama-Gasi Forest Reserve Order, 1962.
176/62	Katsina Native Authority Shema-Rawayau Forest Reserve Order, 1962.
177/62	Misau Native Authority Yanda Bayo Forest Reserve Order, 1962.
178/62	Katsina Native Authority Tsanni II Forest Reserve Order, 1962.
180/62	Bida Native Authority Kucigi Forest Reserve Order, 1962.
181/62	Wushishi Native Authority Wushishi Forest Reserve Order, 1962.
812/62	Katsina Native Authority Unguwar Dabo Forest Reserve Order, 1962.
184/62	Idoma Native Authority Okpobi Forest Reserve Order, 1962.
185/62	Bornu Native Authority Garadai Forest Reserve Order, 1962.
186/62	Hadejia Native Authority Gadari Forest Reserve Order, 1962.
187/62	Keffi Native Authority Kafa Kurmi Forest Reserve Order, 1962.
188/62	Bida Native Authority Duma Hill Forest Reserve Order, 1962.
189/62	Agaie Native Authority Soje Forest Reserve Order, 1962.
190/62	Agaie Native Authority Anfani Forest Reserve Order, 1962.
191/62	Gwari Native Authority Guduma Forest Reserve Order, 1962.
192/62	Lapai Native Authority Etizurugi Forest Reserve Order, 1962.
194/62	Lafia Native Authority Kuramen Akanga Forest Reserve Order, 1962.
195/62	Idoma Native Authority Okoklo Forest Reserve Order, 1962.
196/62	Keffi Native Authority Dutsen Kurafe Forest Reserve Order, 1962.
197/62	Wukari Federation Native Authority Sonkpa Forest Reserve Order, 1962.
203/62	Lapai Native Authority Nugbangi Forest Reserve Order, 1962.
204/62	Kano Native Authority Kyarana Forest Reserve Order, 1962.
205/62	Lafia Native Authority Kuramen Maiakuya Forest Reserve Order, 1962.
2/63	Adamawa Native Authority Lainde Forest Reserve Order, 1963.
3/63	Argungu Native Authority Lema (Amendment) Order, 1963.
9/63	Tiv Native Authority Mbatiav Forest Reserve Order, 1963.
11/63	Argungu Native Authority Augi (Corrigendum) Order, 1963.
19/63	Hadejia Native Authority Rubba Forest Reserve Order, 1963.

B—Miscellaneous Legislation:—

N.N.L.N.	
2/62	A Law to provide for changes in the Administration of Provinces and matters ancillary thereto.

N.A.L.N.

130/62 Shendam Native Authority (Control of Hunting) Order, 1962.

153/62 Argungu Native Authority (Burning of Bush) Order, 1962.

2. *Revision of the Wild Animals Preservation Ordinance.*—The revised Wild Animals Law was published as a Bill during the year and it was one of the Bills for consideration by the 1963/64 Budget Session of the Northern Legislature. It is hoped that it will be passed by the Northern Legislature so that it might receive the Governor's assent in the early part of the next administrative year.

3. Work continued on the preparation of the Hunting Licences and Trophies Regulations and these will be submitted to the Government when the Wild Animals Bill becomes law.

CHAPTER XII.—THE REGIONAL GAME PRESERVATION UNIT

1. Mallam Jibrin Jia, Game Warden, was promoted to the post of Regional Game Warden with effect from 1st April, 1962. The post had been vacant since the death of the holder, Mr Coul-thard, on 13th May, 1961.

2. For the first time the Yankari Game Reserve in Bauchi Province was opened to the public on 1st December, 1962. From the date of its opening to the public in December, 1962 to the end of the year under review, 192 adults and twenty-eight children visited the Yankari Game Reserve.

3. The approach road from Dindima to Maina Maji, the base camp on the Northern end of the Yankari Game Reserve, is in need of good repairs. This is a Bauchi Native Authority road and it seems that the Bauchi Native Authority is not keeping that road under good repairs. There are a number of drifts on the road and these need to be replaced by culverts or bridges. To be able to attract many tourists to the Game Reserve it is necessary that this stretch of road is kept in first class condition. An approach has been made to the Ministry of Works to see if there is any possibility of Government taking over the road.

4. The Regional Game Warden, Mallam Jia, attended the first World Conference on National Parks which was held in Seattle, United States of America from 30th June to 7th July, 1962. The conference, which was followed by six days' excursion to the Olympic, Yellow-Stone and Grand Teton National Parks, was attended by 328 delegates. Mallam Jibrin Jia's expenses for the conference were borne by the World Wildlife Fund through the International Union for the Conservation of Nature and Natural Resources.

5. The second meeting of the Regional Game Preservation Committee was held in Kaduna from July 31st to August 1st, 1962 to discuss the revised Wild Animals Law and the regulations to be made under the revised law. The Committee also discussed the Public Notice for the opening of the Yankari Game Reserve.

6. The Regional Game Warden accompanied the Chief Conservator of Forests to the meeting of the Inter-regional Wildlife Preservation Committee

which discussed, among other items, the possibility of creating more game reserves in the country, the possibilities of attracting outside funds for field research and the nomination of delegates to the forthcoming meeting of the International Union for the Conservation of Nature and Natural Resources scheduled to be held in Nairobi, Kenya, next September.

7. The office of the International Programmes of the Michigan State University, United States, offered Professor George A. Petrides, Professor of Fisheries and Wildlife of that University, an opportunity to visit Nigeria. Professor Petrides was able to visit the Yankari Game Reserve and also the southern shores of Lake Chad in Bornu Province. It was a pity that Professor Petrides' visit coincided with the middle of the rainy season when luxuriant tree and grass growth obscure long range observation of wild animals.

8. The Permanent Secretary, Ministry of Information, Alhaji Ahmed Joda, visited the Yankari Game Reserve with a view to assisting the Forestry Division in the production of a propaganda pamphlet on the Game Reserve.

9. Dr A. M. Jordan and Mr Baldry, both Entomologists with the West African Institute for Trypanosomiasis Research, and a team of workers paid a week's visit to the Yankari Game Reserve in order to study the habit of the tsetse in the wet season.

10. Another game reserve, the Borgu Game Reserve, in Ilorin Province, is in the process of constitution. When this is done arrangements will be made to develop it on the same lines as the Yankari Game Reserve. The proposed Borgu Game Reserve being close to the southern centres of population, such as Ibadan and Lagos, it is expected that it will attract a lot of tourists from the south. It is also close to the Kainji Dam on the River Niger and this is an added advantage.

11. It is gratifying to report a year of steady progress on the part of the Game Preservation Unit.

CHAPTER XIII.—MISCELLANEOUS

1. In October, 1962, an Agricultural and Hydrological Mission started a survey of the Federation of Nigeria. The Mission which consisted of sixteen experts, including a Forestry expert, headed by Mr H. S. M. Ishaque was organised by the Food and Agriculture Organisation of the United Nations. The Mission was to complete the survey in six months, ending in March, 1963.

2. Northern Nigeria being a predominantly savanna country, the Forestry Division requested that the Forestry Expert should be a person with experience of Savanna Forest Development but the East and West preferred a Forest Utilisation expert. As these two qualities cannot be combined in one and the same person the governments decided on a Forest Utilisation Expert and that the North should be assisted by supporting its application for a Savanna Forest Research Project.

3. Up to the end of the year under report it was not possible to obtain the forestry expert but in the meantime the Forestry Division submitted briefs for consideration by the forestry expert when he became available. These briefs are:—

(*i*) a 19-page brief on general Forestry;

(*ii*) a 15-page brief on Staff and Finance;

(*iii*) an 11-page brief on the problems of Savanna Forest Management; and

(*iv*) a 7-page brief on Wild Life.

4. The Forestry Division also put forward the following points as interim terms of reference for the Forestry side of the survey:—

(*a*) To enquire into the extent and distribution of the present Forest Estate in the light of the overall land usage requirements of Northern Nigeria and to make positive recommendations as to the adequacy or otherwise and necessity for future additions or reductions or re-distribution of the Forest Estate;

(*b*) To enquire into the composition and present management of the high forest with a view to making recommendations as to improved silvicultural techniques, improved methods of yield control, exploitation and lines of research and experiment to further improve these methods;

(*c*) To enquire into the composition of the savana forests with a view to making recommendations as to improved silviculture and management, controlled grazing and lines of research and experiment;

(*d*) To enquire into the role of the high forests and savanna as catchment and water conservation areas;

(*e*) To enquire into the production of sawn timber with particular reference to the existing means of production, mechanical and pit-sawing;

(*f*) To enquire into the production and consumption of wood-fuel, the present and future requirements, the possibilities of alternative fuels;

(*g*) To examine the present organisation, structure and relationship of the forest services, Government and Native Authority, with a view to submitting recommendations as to the adequacy or otherwise of the present structure, organisation, relationship and the methods and techniques for the better training of forest staff at all levels;

(*h*) To enquire into and examine the resources available for Forestry Research with a view to recommendations as to the adequacy or otherwise, additional lines of research and experimentation and the possibility of the introduction of new exotic species;

(*j*) To review, in the light of the overall findings of the survey, the Forestry Policy of Northern Nigeria; and

(*k*) To review the existing Forestry Legislation and make recommendations as to the adequacy, or otherwise, of that legislation as an instrument for the enforcement of the proper control, preservation and management of the forest resources of Northern Nigeria.

5. *Acknowledgement.*—The assistance of the Sister Divisions of the Ministry, other Ministries (notably the Ministries of Agriculture and Information), the Administration and Native Authorities, without whose generous co-operation at all levels Forestry could not hope to progress, is greatly appreciated. Lastly, but by no means the least, many thanks are also due to all members of the Forestry Division and the Native Authority Forestry Services for their support and devotion to duty for it is only by the efforts of all concerned with Forestry that Forestry can play its proper part in the life and economy of the nation.

A. J. K. G. Imam,
Acting Chief Conservator of Forests

Standard Form I—Area in Square Miles of Forest Land on 31st March, 1963

Territorial Unit and Category of Forest	Total Area of Unit (Square Mile)	State Forest				Communal Forest				Private Forest	Total Forest Reserves (Cols. 3 4, 7 and 8)	Total Forest Land	Percentage of Whole Area	
		Production Reserves	Protection Reserves	Unreserved	Total State Forest	Production Reserves	Protection Reserves	Unreserved	Total Communal Forest				Forest Reserves (Cols. 3, 4, 7 and 8)	Total Forest Land
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Adamawa														
High Forest ...	—	—	—	—	—	11.00	—	9.00	20.00	—	11.00	20.00	0.05	0.09
Savanna ...	—	—	—	—	—	454.07	—	5,812.93	6,267.00	—	454.07	6,267.00	2.16	29.79
Total ...	21,039	—	—	—	—	465.07	—	5,821.93	6,287.00	—	465.07	6,287.00	2.21	29.88
Bauchi														
Savanna ...	—	—	—	—	—	2,867.84 (*b*)	—	9,009.01 (*b*)	11,876.85	—	2,867,84 (*b*)	11,876.85	10.98	45.5
Total ...	26,120	—	—	—	—	2,867.84	—	9,009.01	11,876.85	—	2,867.84	11,876.85	10.98	45.5
Benue														
High Forest ...	—	—	—	—	—	61.38	—	672.79	734.17	—	61.38	734.17	0.22	2.68
Savanna ...	—	—	—	—	—	545.82	—	12,128.13	12,673.95	—	545.82	12,673.95	1.99	46.12
Total ...	27,477	—	—	—	—	607.20	—	12,800.92	13,408.12	—	607.20	13,408.12	2.21	48.80
Bornu														
Savanna ...	—	—	—	—	—	2,547.93 (*c*)	—	7,966.07	10,514.00 (*e*)	—	2,547.30	10,514(*e*).00	5.73	23.63
Total ...	44,488(*a*)	—	—	—	—	2,547.93	—	7,966.07	10,514.00	—	2,547.30	10,514.00	5.73	23.63

STANDARD FORM I—AREA IN SQUARE MILES OF FOREST LAND ON 31ST MARCH, 1963—*continued*

Territorial Unit and Category of Forest	Total Area of Unit (Square Miles)	State Forest				Communal Forest				Private Forest	Total Forest Reserves (Cols. 3, 4, 7 and 8)	Total Forest Land	Percentage of Whole Area	
		Production Reserves	Protection Reserves	Unreserved	Total State Forest	Production Reserves	Protection Reserves	Unreserved	Total Communal Forest				Forest Reserves (Cols. 3, 4, 7 and 8)	Total Forest Land
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ilorin														
High Forest ...	—	—	—	—	—	3.08	—	14.00	17.08	—	3.08	17.08	0.02	0.10
Savanna ...	—	—	—	—	—	2,266.64	—	10,551.17	12,817.81	—	2,266.64	12,817.81	12.79	72.34
Total ...	17,719	—	—	—	—	2,269.72	—	10,565.17	12,834.89	—	2,269.72	12,834.89	12.81	72.44
Kabba														
High Forest ...	—	20.11	—	—	20.11	342.10	—	490.43	832.53	—	362.21	852.64	3.3	7.8
Savanna ...	—	180.44	—	—	180.44	1,391.03	—	5,634.75	7,025.78	—	1,571.47	7,206.22	14.4	65.8
Total ...	10,953	200.55	—	—	200.55	1,733.13	—	6,125.18	7,858.31	—	1,933.68	8,058.86	17.7	73.6
Kano														
Savanna ...	—	10	—	—	10	827.73	—	2,017.27	2,845	—	837.73	2,855	5.04	17.17
Total ...	16,630	10	—	—	10	827.73	—	2,017.27	2,845	—	837.73	2,855	5.04	17.17
Katsina														
Savanna ...	—	—	—	—	—	1,377.90	—	168.10	1,546	—	1,377.90	1,546	14.55	16.32
Total ...	9,466	—	—	—	—	1,377.90	—	168.10	1,546	—	1,377.90	1,546	14.55	16.32

STANDARD FORM I—AREA IN SQUARE MILES OF FOREST LAND ON 31ST MARCH, 1963—*continued*

Territorial Unit and Category of Forest	*Total Area of Unit (Square Miles)*	*State Forest*				*Communal Forest*				*Private Forest*	*Total Forest Reserves (Cols. 3, 4, 7 and 8)*	*Total Forest Land*	*Percentage of Whole Area*	
		Production Reserves	*Protection Reserves*	*Unreserved*	*Total State Forest*	*Production Reserves*	*Protection Reserves*	*Unreserved*	*Total Communal Forest*				*Forest Reserves (Cols. 3, 4, 7 and 8)*	*Total Forest Land*
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Niger														
High Forest ...	—	—	—	—	—	26.87	—	173.13	200	—	26.87	200	0.10	0.7
Savanna ...	—	—	—	—	—	1,072.45	—	9,281.55	10,354	—	1,072.45	10,354	3.73	36.1
Total ...	28,666	—	—	—	—	1,099.32	—	9,454.68	10,554	—	1,099.32	10,554	3.83	36.8
Plateau														
High Forest ...	—	—	—	—	—	2.92	—	27.08	30	—	2.92	30	0.03	0.27
Savanna ...	—	—	—	—	—	966.37	—	2,661.63	3,628	—	966.37	3,628	8.56	32.19
Total ...	11,272	—	—	—	—	969.29	—	2,688.71	3,658	—	969.29	3,658	8.59	32.45
Sardauna														
High Forest ...	—	—	—	—	—	20.63	—	459.37	480	—	20.63	480	0.15	3.5
Savanna ...	—	—	—	—	—	185.53(*c*)	—	4,409.47	4,595(*e*)	—	185.53	4,595(*e*)	1.34	33.2
Total ...	13,833(*a*)	—	—	—	—	206.16	—	4,868.84	5,075	—	206.16	5,075	1.49	36.7
Sokoto														
Savanna ...	—	—	—	—	—	7,663.53(*d*)	—	4,503.95	12,167.48	—	7,663.53	12,167.48	21	33.3
Total ...	36,477	—	—	—	—	7,663.53	—	4,503.95	12,167.48	—	7,663.53	12,167.48	21	33.3

Standard Form I—Area in Square Miles of Forest Land on 31st March, 1963—*continued*

Territorial Unit and Category of Forest	*Total Area of Unit (Square Miles)*	*State Forest*				*Communal Forest*				*Private Forset*	*Total Forest Reserves (Cols. 3, 4, 7 and 8)*	*Total Forest Land*	*Percentage of Whole Area*	
		Production Reserves	*Protection Reserves*	*Unreserved*	*Total State Forest*	*Production Reserves*	*Protection Reserves*	*Unreserved*	*Total Communal Forest*				*Forest Reserves (Cols. 3, 4, 7 and 8)*	*Total Forest Land*
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Zaria														
High Forest ...	—	—	—	—	—	44.08	—	20.00	64.08	—	44.08	64.08	0.25	0.36
Savanna ...	—	—	—	—	—	2,137.64	137.59	8,735.77	11,011.00	—	2,275.23	11,011.00	12.89	62.41
Total ...	17,642	—	—	—	—	2,181.72	137.59	8,755.77	11,075.08	—	2,319.31	11,075.08	13.14	62.77
N. Nigeria														
High Forest ...	—	20.11	—	—	20.11	512.06	—	1,865.80	2,377.86	—	532.17	2,397.97	0.2	0.85
Savanna ...	—	190.44	—	—	190.44	24,304.48	137.59	82,879.80	107,321.87	—	24,632.51	107,512.31	8.7	38.15
Total ...	281,782	210.55	—	—	210.55	24,816.54	137.59	84,745.60	109,699.73	—	25,164.68	109,910.28	8.9	39.00
N. Nigeria 1961-62 ...	281,782	210.55	—	—	210.55	24,397.40	137.59	85,164.74	109,699.73	—	24,745.54	109,910.28	8.8	39.00

Notes:

(*a*) Transfer of Dikwa Emirate (3,800 square miles) from Sardauna Province to Bornu Province thus:—
Bornu Province 40,688+3,800 =44,488 square miles;
Sardauna Province 17,633—3,800 =13,833 square miles.

(*b*) Last year's figure 2,937.60 square miles. The reduction of 69.76 square miles (2,937.60—2,867.84) due to deconstitution of a CFA (0.28 square mile) and a loss of 69.48 square miles during consolidation of Lame Forest Reserve (69.48+0.28 =69.76 square miles).

(*c*) Includes 10.55 square miles of Forest Reserves and 17.18 square miles of CFA of Dikwa Native Authority transferred from Sardauna Province to Bornu Province.

(*d*) Last year's figures 7,663.73 square miles. A loss of 0.2 square mile resulting from a new reserve of 7 square miles exchanged for an excision of 7.20 square miles Lema Forest Reserve—Argungu Emirate.

(*e*) Transfer of 530 square miles Savanna Forests from Sardauna to Bornu Province on restoring Dikwa Division to Bornu Province.

Standard Form II—Statement in Square Miles of Progress in Forest Reservation and Demarcation during the Year ended 31st March, 1963

Territorial Unit and Category of Reserve	*Reserves Approved but not Legally Constituted*				*Reserves Constituted but not Completely Demarcated*	*Reserves Constituted and Demarcated*			
	On 1st April, 1962	*Added during Year*	*Excluded or Transferred to Column 8*	*On 31st March, 1963*		*On 1st April, 1962*	*Added during Year*	*Excluded during Year*	*On 31st March, 1963*
1	2	3	4	5	6	7	8	9	10
Adamawa Province:									
(*a*) Government Forest Reserves	—	—	—	—	—	—	—	—	—
(*b*) N.A. Forest Reserves ...	416.51	526.88	307.09	636.30	—	324.38	100.51	—	424.89
(*c*) Communal Forestry Areas	—	2.29	2.29	—	—	36.64	3.54	—	40.18
Total, Adamawa Province ...	416.51	529.17	309.38	636.30	—	361.02	104.05	—	465.07
Bauchi Province:									
(*a*) Government Forest Reserves	—	—	—	—	—	—	—	—	—
(*b*) N.A. Forest Reserves ...	382.17	257.66	281.42(*j*)	358.41	—	2,921.87	278.92	348.40	2,852.39
(*c*) Communal Forestry Areas	—	—	—	—	—	15.73	0.31	0.59	15.45
Total, Bauchi Province ...	382.17	257.66	281.42	358.41	—	2,937.60	279.23	348.99	2,867.84
Benue Province:									
(*a*) Government Forest Reserves	—	—	—	—	—	—	—	—	—
(*b*) N.A. Forest Reserves ...	465.67	559.73	147.24	878.16	—	540.15	30.00	0.29	569.86
(*c*) Communal Forestry Areas	—	—	—	—	—	38.03	—	0.69	37.34
Total, Benue Province ...	465.67	559.73	147.24	878.16	—	578.18	30.00	0.98	607.20
Bornu Province:									
(*a*) Government Forest Reserves	—	—	—	—	—	—	—	—	—
(*b*) N.A. Forest Reserves ...	294.70	47.15(*a*)	198.83	143.02	—	2,184.94	148.62(*c*)	0.63	2,332.93
(*c*) Communal Forestry Areas	—	—	—	—	—	198.02	17.18(*b*)	0.83	214.37
Total, Bornu Province ...	294.70	47.15	198.83	143.02	—	2,382.96	165.80	1.46	2,547.30

STANDARD FORM II—STATEMENT IN SQUARE MILES OF PROGRESS IN FOREST RESERVATION AND DEMARCATION DURING THE YEAR ENDED 31ST MARCH, 1963—*continued*

Territorial Unit and Category of Reserve	*Reserves Approved but not Legally Constituted*				*Reserves Constituted but not Completely Demarcated*	*Reserves Constituted and Demarcated*			
	On 1st April, 1962	*Added during Year*	*Excluded or Transferred to Column 8*	*On 31st March, 1963*		*On 1st April, 1962*	*Added during Year*	*Excluded during Year*	*On 31st March, 1963*
1	2	3	4	5	6	7	8	9	10
Ilorin Province:									
(*a*) Government Forest Reserves	—	—	—	—	—	—	—	—	—
(*b*) N.A. Forest Reserves ...	2,906.50	11.42(*d*)	1,398.91	1,519.01	—	2,257.33	10.61	—	2,267.94
(*c*) Communal Forestry Areas	—	—	—	—	—	1.78	—	—	1.78
Total, Ilorin Province ...	2,906.50	11.42	1,398.91	1,519.01	—	2,259.11	10.61	—	2,269.72
Kabba Province									
(*a*) Government Forest Reserves	—	—	—	—	—	200.55	—	—	200.55
(*b*) N.A. Forest Reserves ...	60.01	—	—	60.01	—	1,733.09	—	—	1,733.09
(*c*) Communal Forestry Areas	—	—	—	—	—	0.04	—	—	0.04
Total, Kabba Province ...	60.01	—	—	60.01	—	1,933.68	—	—	1,933.68
Kano Province:									
(*a*) Government Forest Reserves	—	—	—	—	—	10.00	—	—	10.00
(*b*) N.A. Forest Reserves ...	53.04	0.22	13.86	39.40	—	759.56	13.37	—	772.93
(*c*) Communal Forestry Areas	—	—	—	—	—	55.18	—	0.38	54.80
Total, Kano Province ...	53.04	0.22	13.86	39.40	—	824.74	13.37	0.38	837.73
Katsina Province:									
(*a*) Government Forest Reserves	—	—	—	—	—	—	—	—	—
(*b*) N.A. Forest Reserves ...	32.52	0.20	16.05	16.67	—	1,166.52	15.97	—	1,182.49
(*c*) Communal Forestry Areas	—	—	—	—	—	208.71(*f*)	—	13.30	195.41
Total, Katsina Province ...	32.52	0.20	16.05	16.67	—	1,375.23	15.97	13.30	1,377.90

STANDARD FORM II—STATEMENT IN SQUARE MILES OF PROGRESS IN FOREST RESERVATION AND DEMARCATION DURING THE YEAR ENDED 31ST MARCH, 1963—*continued*

Territorial Unit and Category of Reserve	*Reserves Approved but not Legally Constituted*				*Reserves Constituted but not Completely Demarcated*	*Reserves Constituted and Demarcated*			
	On 1st April, 1962	*Added during Year*	*Excluded or Transferred to Column 8*	*On 31st March, 1963*		*On 1st April, 1962*	*Added during Year*	*Excluded during Year*	*On 31st March, 1963*
1	2	3	4	5	6	7	8	9	10
Niger Province:									
(*a*) Government Forest Reserves	—	—	—	—	—	—	—	—	—
(*b*) N.A. Forest Reserves ...	1,224.33	364.27	208.13	1,380.47	—	913.86	185.25	—	1,099.11
(*c*) Communal Forestry Areas	—	—	—	—	—	0.21	—	—	0.21
Total, Niger Province ...	1,224.33	364.27	208.13	1,380.47	—	914.07	185.25	—	1,099.32
Plateau Province:									
(*a*) Government Forest Reserves	—	—	—	—	—	—	—	—	—
(*b*) N.A. Forest Reserves ...	150.77	—	4.44	146.33	—	933.41	4.44	—	937.85
(*c*) Communal Forestry Areas	0.91	—	0.91	—	—	30.12	1.32	—	31.44
Total, Plateau Province ...	151.68	—	5.35	146.33	—	963.53	5.76	—	969.29
Sardauna Province									
(*a*) Government Forest Reserves	—	—	—	—	—	—	—	—	—
(*b*) N.A. Forest Reserves ...	232.78	—	49.66(*c*)	183.12	—	189.88	1.51	10.55(*h*)	180.84
(*c*) Communal Forestry Areas	—	—	—	—	—	42.50	—	17.18(*g*)	25.32
Total, Sardauna Province ...	232.78	—	49.66	183.12	—	232.38	1.51	27.73	206.16
Sokoto Province:									
(*a*) Government Forest Reserves	—	—	—	—	—	—	—	—	—
(*b*) N.A. Forest Reserves ...	7.29	—	7.29	—	—	7,577.03	7.29	7.20	7,577.12
(*c*) Communal Forestry Areas	—	—	—	—	—	86.70	—	0.29	86.41
Total, Sokoto Province ...	7.29	—	7.29	—	—	7,663.73	7.29	7.49	7,663.53

STANDARD FORM II—STATEMENT IN SQUARE MILES OF PROGRESS IN FOREST RESERVATION AND DEMARCATION DURING THE YEAR ENDED 31ST MARCH, 1963—*continued*

Territorial Unit and Category of Reserve	*Reserves Approved but not Legally Constituted*				*Reserves Constituted but not Completely Demarcated*	*Reserves Constituted and Demarcated*			
	On 1st April, 1962	*Added during Year*	*Excluded or Transferred to Column 8*	*On 31st March, 1963*		*On 1st April, 1962*	*Added during Year*	*Excluded during Year*	*On 31st March, 1963*
1	2	3	4	5	6	7	8	9	10
Zaria Province:									
(*a*) Government Forest Reserves	—	—	—	—	—	—	—	—	—
(*b*) N.A. Forest Reserves ...	120.76	1.09	—	121.85	—	2,242.02	—	—	2,242.02
(*c*) Communal Forestry Areas	—	—	—	—	—	77.29	—	—	77.29
Total, Zaria Province	120.76	1.09	—	121.85	—	2,319.31	—	—	2,319.31
Northern Nigeria:									
(*a*) Government Forest Reserves	—	—	—	—	—	210.55	—	—	210.55
(*b*) N.A. Forest Reserves ...	6,347.05	1,768.62	2,632.92	5,482.75	—	23,744.04	796.49	367.07	24,173.46
(*c*) Communal Forestry Areas	0.91	2.29	3.20	—	—	790.95	22.35	33.26	780.04
Total, Northern Nigeria ...	6,347.96	1,770.91	2,636.12	5,482.75	—	24,745.54	818.84	400.33	25,164.05
Total, N. Nigeria, 1961-62 ...	3,420.86	4,131.26	1,204.16	6,347.96	—	24,038.97	1,426.02	719.45	24,745.54

(*a*) 47.15 square miles of reserve proposals transferred from Sardauna Province.
(*b*) 17.18 square miles of Communal Forestry Areas transferred from Sardauna Province.
(*c*) Includes 10.55 square miles of constituted reserves transferred from Sardauna Province.
(*d*) Includes 10.61 square miles omitted in the 1961-62 Regional Report.
(*e*) Includes 47.15 square miles transferred to Bornu Province; *See* (*a*) above.
(*f*) Typographical error in column 10 of 1961-62 Regional Report (C.F.A.s should read 208.17 not 203.17).
(*g*) *See* (*b*) above.
(*h*) *See* (*c*) above.
(*j*) An error of 34 square miles in column 5 of 1961-62 Annual Report. Correct figure 348.17 square miles not 382.17.

Standard Form III—Statement in Square Miles of Progress in Working and Other Plans during the Year ended 31st March, 1963

Territorial Unit and Type of Plan 1	*Area under Plans*				*Area not under Plans on 31st March, 1963* 6	*Total Area (Cols. 5 and 6)* 7	*Area for which Plans revised during Year* 8
	On 1st April, 1962 2	*Added during Year* 3	*Excluded during Year* 4	*On 31st March, 1963* 5			
Adamawa Province:							
A. Intensive	—	—	—	—			—
B. Simple	5	—	—	5			—
Total, Adamawa Province ...	5	—	—	5	6,282	6,287	—
Bauchi Province:							
A. Intensive	99	23	—	122			40
B. Simple	25	—	25	—			—
Total, Bauchi Province ...	124	23	25	122	11,755	11,877	40
Benue Province:							
A. Intensive	—	—	—	—			—
B. Simple	6	—	—	6			—
Total, Benue Province ...	6	—	—	6	13,402	13,408	—
Bornu Province:							
A. Intensive	1	—	—	1			
B. Simple	1	4	—	5			
Total, Bornu Province ...	2	4	—	6	10,508	10,514(*b*)	—
Ilorin Province:							
A. Intensive	—	—	—	—			
B. Simple	1	—	—	1			
Total, Ilorin Province ...	1	—	—	1	12,834	12,835	—

STANDARD FORM III—STATEMENT IN SQUARE MILES OF PROGRESS IN WORKING AND OTHER PLANS DURING THE YEAR ENDED 31ST MARCH, 1963—*continued*

Territorial Unit and Type of Plan 1	*Area under Plans*				*Area not under Plans on 31st March, 1963* 6	*Total Area (Cols. 5 and 6)* 7	*Area for which Plans revised during Year* 8
	On 1st April, 1962 2	*Added during Year* 3	*Excluded during Year* 4	*On 31st March, 1963* 5			
Kabba Province:							
A. Intensive	147	—	—	147			
B. Simple	1	—	—	1			
Total, Kabba Province ...	148	—	—	148	7,911	8,059	
Kano Province:							
A. Intensive	1	—	—	1			
B. Simple	79	—	16	63			
Total, Kano Province ...	80	—	16	64	2,791	2,855	0.25
Katsina Province:							
A. Intensive	—	—	—	—			
B. Simple	615	4	5	614			—
Total, Katsina Province ...	615	4	5	614	932	1,546	—
Niger Province:							
A. Intensive	—	—	—	—			
B. Simple	12	—	—	12			—
Total, Niger Province ...	12	—	—	12	10,542	10,554	—
Plateau Province:							
A. Intensive	—	—	—	—			
B. Simple	59	1(*a*)	—	60			—
Total, Plateau Province ...	59	1	—	60	3,598	3,658	—

STANDARD FORM III—STATEMENT IN SQUARE MILES OF PROGRESS IN WORKING AND OTHER PLANS DURING THE YEAR ENDED 31ST MARCH, 1963—*continued*

Territorial Unit and Type of Plan	*Area under Plans*				*Area not under Plans on 31st March, 1963*	*Total Area (Cols. 5 and 6)*	*Area for which Plans revised during Year*
	On 1st April, 1962	*Added during Year*	*Excluded during Year*	*On 31st March, 1963*			
1	2	3	4	5	6	7	8
Sardauna Province:							
A. Intensive	—	—	—	—	—		—
B. Simple	—	—	—	—	—	—	—
Total, Sardauna Province ...	—	—	—	—	5,075	5,075(*c*)	—
Sokoto Province:							
A. Intensive	—	—	—	—	—	—	
B. Simple	928	52	—	980			
Total, Sokoto Province ...	928	52	—	980	11,187	12,167	
Zaria Province:							
A. Intensive	21	—	—	21	—	—	—
B. Simple	6	—	—	6	—	—	—
Total, Zaria Province ...	27	—	—	27	11,048	11,075	—
Northern Nigeria:							
A. Intensive	269	23	—	292	—	—	
B. Simple	1,738	61	46	1,753			
Total, Northern Nigeria ...	2,007	84	46	2,045	107,865	109,910	40.25
Northern Nigeria, 1961-62 ...	556	1,507	56	2,007	107,903	109,910	1

(*a*) Error of 1 square mile in the 1961-62 Regional Report, Column 5: Figure should read 60 not 59.

(*b*) Transfer of Dikwa Division from Sardauna to Bornu Province, 530 square miles.

(*c*) *See* (*b*) above.

Standard Form V—Summary of Forest Offences for the Year ended 31st March, 1963

Territorial Unit	Cases taken to Court: Imprisonment Without Option		Cases taken to Court: Fine	Cases taken to Court: Cautioned nd Discharged	Cases taken to Court: Acquitted	Cases dealt With Departmentally		Offenders Unknown		Total, all Offences		Confiscated Property Sold or released		Compensation for Damages	
	Cases	Cases	Amount £	Cases	Cases	Cases	Amount £	Cases	Amount £	Cases	Amount £	Cases	Amount £	Cases	Amount £
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A. Provincial Totals:															
Adamawa	1	143	117	44	—	—	—	11	7	199	188	—	—	—	—
Bauchi	—	38	52	1	—	—	—	—	—	39	39	—	—	—	—
Benue	44	403	1,129	—	—	—	—	—	—	447	513	118	493	3	15
Bornu	30	234	554	24	33	11	17	1	1	333	333	1	1	—	—
Ilorin	13	19	43	2	1	—	—	—	—	35	35	—	—	—	—
Kabba	3	95	521	—	11	—	—	—	—	109	96	33	581	—	—
Kano	—	207	211	—	—	—	—	—	—	207	161	—	—	—	—
Katsina	—	51	225	6	—	—	—	—	—	57	475	—	—	—	—
Niger	—	85	172	—	—	—	—	—	—	85	85	—	—	—	—
Plateau	2	282	467	24	3	1	1	16	22	328	328	—	—	1	—
Sardauna	2	15	141	2	—	—	—	1	1	20	48	—	—	—	—
Sokoto	3	52	364	7	3	1	6	2	3	68	155	—	—	—	—
Zaria	—	171	779	—	—	—	—	—	—	171	231	42	23	—	—
Total, Northern Nigeria	98	1,795	4,775	110	51	13	24	31	34	2,098	2,687	194	1,098	4	15
B. Category:															
(*i*) Inside Forest Reserve															
(*a*) Major Forest Produce	17	208	623	14	3	1	8	5	4	248	326	30	579	—	—
(*b*) Minor Forest Produce	1	130	331	9	1	—	2	11	1	152	194	—	1	—	—
(*c*) Farming	—	103	299	8	2	—	2	—	—	113	137	—	—	—	—
(*d*) Other Offences	7	150	275	12	3	—	—	6	—	178	227	—	—	—	—
Total Inside	25	591	1,528	43	9	1	12	22	5	691	884	30	580	—	—
(*ii*) Outside Forest Reserves Forest Offences	73	1,204	3,247	67	42	12	12	9	29	1,407	1,803	164	518	4	15
Total, Northern Nigeria	98	1,795	4,775	110	51	13	24	31	34	2,098	2,687	194	1,098	4	15
Total, Northern Nigeria, 1961-62	76	1,609	4,356	77	15	1	1	555	274	2,358	2,595	85	311	37	396

Standard Form VI—Statement in Acres of Progress in Concentrated Regeneration and Creation of Plantations During the Year ended 31st March, 1963

I. Regeneration of Exploited Forest

Territorial Unit	Type of Regeneration	Area under Regeneration					Area of Completed Regeneration				II. Creation of Plantations					
		On 1–4–62	Added during Year	Abandoned during Year	Transferred to Col. 9	On 31–3–63	On 1–4–62	Added during Year	Excluded during Year	On 31–3–63	Type of Plantation	Area on 1–4–62	Added during Year	Excluded during Year	Area on 31–3–63	Area Felled over during Year
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Adamawa ...	A	—	138	—	138	—	638	138	—	776	A	361	15	67	309	—
	B	—	—	—	—	—	—	—	—	—	B	—	—	—	—	—
	C	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total ...		—	138	—	138	—	638	138	—	776	—	361	15	67	309	—
Bauchi ...	A	—	2,037	—	2,037	—	12,278	2,037	—	14,315	A	277	324	21	580	7
	B	—	—	—	—	—	—	—	—	—	B	333	103	20	416	—
	C	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total ...		—	2,037	—	2,037	—	12,278	2,037	—	14,315		610	427	41	996	7
Benue ...	A	—	—	—	—	—	243	—	—	243	A	1,435	38	6	1,467	—
	B	—	—	—	—	—	—	—	—	—	B	234	68	5	297	—
	C	79	—	—	—	79	—	—	—	—	—	—	—	—	—	—
Total ...		79	—	—	—	79	243	—	—	243		1,669	106	11	1,764	—
Bornu ...	A	—	115	—	115	—	2,813	115	—	2,928	A	1,923	261(*a*)	144	2,040	—
	B	—	—	—	—	—	—	—	—	—	B	—	—	—	—	—
	C	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total ...		—	115	—	115	—	2,813	115	—	2,928		1,923	261	144	2,040	115
Ilorin ...	A	—	6	—	6	—	2,342	6	—	2,348	A	488	16	4	500	51
	B	—	—	—	—	—	—	—	—	—	B	194	12	3	203	—
	C	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total ...		—	6	—	6	—	2,342	6	—	2,348		682	28	7	703	51
Kabba ...	A	—	—	—	—	—	3,840	—	—	3,840	A	23	—	—	23	—
	B	1,203	—	1,203	—	—	—	—	—	—	B	300	40	2	338	—
	C	—	82	—	82	—	33	82	—	115	—	—	—	—	—	—
Total ...		1,203	82	1,203	82	—	3,873	82	—	3,959		323	40	2	361	—

Standard Form VI—Statement in Acres of Progress in Concentrated Regeneration and Creation of Plantations during the Year ended 31st March, 1963—*continued*

		I. Regeneration of Exploited Forest									II. Creation of Plantations					
		Area under Regeneration					*Area of Completed Regeneration*									
Territorial Unit	*Type of Regeneration*	*On 1-4-62*	*Added during Year*	*Abandoned during Year*	*Transferred to Col. 9*	*On 31-3-63*	*On 1-4-62*	*Added during Year*	*Excluded during Year*	*On 31-3-63*	*Type of Plantation*	*Area on 1-4-62*	*Added during Year*	*Excluded during Year*	*Area on 31-3-63*	*Area Felled over during Year*
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Kano ...	A	—	1,570	—	1,570	—	33,017	1,570	—	34,587	A	483	82	—	565	—
	B	—	—	—	—	—	—	—	—	—	B	371	91	—	462	—
	C	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total ...		—	1,570	—	1,570	—	33,017	1,570	—	34,587		854	173	—	1,027	57
Katsina ...	A	—	986	—	986	—	20,694	986	—	21,680	A	2,452	96	—	2,548	—
	B	—	—	—	—	—	—	—	—	—	B	—	—	—	—	—
	C	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total ...		—	986	—	986	—	20,694	986	—	21,680		2,452	96	—	2,548	62
Niger ...	A	—	323	—	201	122	4,105	201	—	4,306	A	—	—	—	—	—
	B	—	—	—	—	—	—	—	—	—	B	539	65	—	604	—
	C	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total ...		—	323	—	201	122	4,105	201	—	4,306		539	65	—	604	—
Plateau ...	A	—	40	—	40	—	10,513	40	—	10,553	A	3,747	305	1,961(*b*)	2,091	12
	B	—	—	—	—	—	—	—	—	—	B	239	2,174(*c*)	222	2,191	222
	C	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total ...		—	40	—	40	—	10,513	40	—	10,553		3,986	2,479	2,183	4,282	234
Sardauna ...	A	—	1	—	1	—	—	3(*a*)	—	3	A	151	68	67(*d*)	152	—
	B	—	—	—	—	—	—	—	—	—	B	—	—	—	—	—
	C	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total ...		—	1	—	1	—	—	3	—	3		151	68	67	152	—
Sokoto ...	A	—	320	—	320	—	18,240	320	—	18,560	A	678	431	—	1,109	25
	B	—	—	—	—	—	—	—	—	—	B	823	130	190	763	12
	C	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total ...		—	320	—	320	—	18,240	320	—	18,560		1,501	561	190	1,872	37

Standard Form VI—Statement in Acres of Progress in Concentrated Regeneration and Creation of Plantations during the Year ended 31st March, 1963—*continued*

I. Regeneration of Exploited Forest											II. Creation of Plantations					
		Area under Regeneration					Area Completed Regeneraiton									
Territorial Unit	*Type of Regeneration*	*On 1-4-62*	*Added during Year*	*Abandoned during Year*	*Transferred to Col. 9*	*On 31-3-63*	*On 1-4-62*	*Added during Year*	*Excluded during Year*	*On 31-3-63*	*Type of Plantation*	*Area on 1-4-62*	*Added during Year*	*Excluded during Year*	*Area on 31-3-63*	*Area Felled over during Year*
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Zaria ...	A	—	55	—	55	—	18,246	55	1,313	16,988	A	—	—	—	—	—
	B	417	—	—	—	417	—	—	—	—	B	287	21	—	308	—
	C	—	120	—	—	120	—	—	—	—	—	—	—	—	—	—
Total ...		417	175	—	55	537	18,246	55	1,313	16,988		287	21	—	308	—
Northern Nigeria	A	—	5,591	—	5,462	122	126,969	5,471	1 313	131,127	A	12,018	1,636	2,270	11,384	—
	B	1,620	—	1,203	—	417	—	—	—	—	B	3,320	2,704	442	5,582	—
	C	79	202	—	8	199	33	82	—	115	—	—	—	—	—	—
Total ...		1,699	5,793	1,203	5,551	738	127,002	5,553	1,313	131,242		15,338	4,340	2,712	16, 966	563
Northern Nigeria, 1961-62 ...		1,620	7,566	—	7,487	1,699	119,225	7,785	8	127,002		14,593	1,525	780	15,338	473

Types of Regeneration:

A—Coppice regeneration.

B—Tropical Shelterwood System.

C—Enrichment planting of High Forest and assisted natural regeneration.

(*a*) Includes 2 acres, Gembu Communal Forestry Areas 1 and 2 omitted in 1961-62 Regional Report.

Type of Plantations:

A—Afforestation of land hitherto not carrying forest crop of any value.

B—Replacement of natural forest crops by plantation form of crops.

(*a*) Includes 67 acres of plantations transferred from Sardauna Province.

(*b*) Includes 1949 acres wrongly classified in 1961-62 Regional Report.

(*c*) Includes 1950 acres wrongly classified in 1961-62 Regional Report.

(*d*) Transferred to Bornu Province.

Standard Form VII—Outturn in Solid Cubic Feet of Timber and Fuel for the Year ended 31st March, 1963

Territorial Unit	*Removed in Logs*	*Sawn at Stump*	*Sleepers*	*Shingles*	*Other Hewn Wood*	*Other Split Wood*	*Round Wood*	*Pulp Wood*	*Firewood*	*Charcoal*	*Total Equivalent or Round Timber*	*Total Value in £*
1	2	3	4	5	6	7	8	9	10	11	12	13
Provinces												
Adamawa	—	308	—	—	84	14,960	16,068	—	516,300	—	549,398	—
Bauchi	—	—	—	—	1,186	104,020	272,466	—	816,400	400	1,205,546	—
Benue	—	77,464	—	—	2,641	9,252	532	—	156,000	—	502,044	—
Bornu	—	—	—	—	869	880	50,672	—	384,100	—	444,342	—
Ilorin	30,450	5,651	—	—	111	1,320	15,952	—	75,500	—	157,082	—
Kabba	53,053	168,963	—	—	295	45,730	16,616	—	35,900	—	847,783	—
Kano	—	—	—	—	—	1,440	2,924	—	394,781	—	399,145	—
Katsina	—	—	—	—	73	2,932	25,822	—	281,960	—	311,444	—
Niger	—	49,683	—	—	714	1,850	16,192	—	140,700	—	364,612	—
Plateau	—	2,676	—	—	403	2,930	14,750	—	36,500	1,500	70,420	—
Sardauna	—	1,503	—	—	103	1,010	4,124	—	51,200	—	63,374	—
Sokoto	—	1,489	—	—	1,097	16,342	53,272	—	203,390	—	289,930	—
Zaria	33,978	66,662	—	—	2,316	16,860	33,310	—	191,000	5,650	587,584	—
Total, Northern Nigeria ...	117,481	374,399	—	—	9,892	219,526	522,700	—	3,283,731	7,550	5,792,704	290,501
Total, Northern Nigeria, 1961-62	153,579	306,306	—	—	12,267	252,611	418,454	—	4,017,966	5,920	6,220,711	268,360
Increase+ ...	—	68,093	—	—	—	—	104,246	—	—	1,630	—	—
Decrease— ...	36,098	—	—	—	2,375	33,085	—	—	734,235	—	428,007	—

Standard Form VIII—Outturn by Value in Pounds Sterling of Minor Forest Produce from Forest Reserves during the Year ended 31st March, 1963

Territorial Unit Source of Produce 1	*Gum Arabic* 2	*Goras or Bamboo* 3	*Thatching Grass* 4	*Palm Wine* 5	*Canes* 6	*Kapok* 7	*Raphia Mid-ribs (Gongola)* 8	*Fibres* 9	*Christmas Trees* 10	*Honey* 11	*Sale of Seedlings* 12	*Miscellaneous* 13
Provinces:												
Adamawa	—	251	—	—	—	—	—	—	—	—	—	—
Bauchi	—	224	39	13	—	8	851	389(*a*)	—	1	—	14(*b*)
Benue	—	—	—	2,063	—	—	88	15	—	—	—	18
Bornu	231,285	2	—	—	—	—	32	—	—	—	—	—
Ilorin	—	—	—	29	—	—	—	—	—	—	—	61
Kabba	—	—	—	2,487	—	—	—	—	—	—	—	—
Kano	—	—	—	—	—	—	—	—	—	—	—	—
Katsina	—	—	—	—	—	—	—	—	—	—	—	—
Niger	—	14	—	—	—	—	46	—	—	—	—	—
Plateau	—	27	104	318	—	—	—	—	15	—	53	16
Sardauna	—	1	—	19	—	—	—	—	—	—	—	6
Sokoto	—	—	—	—	—	—	261	—	—	—	—	—
Zaria	—	31	—	816	—	—	189	83	—	—	—	56(*c*)
Total, Northern Nigeria	231,285	550	143	5,745	—	8	1,467	487	15	1	53	171
Total, Northern Nigeria, 1961-62 ...	—	939(*d*)	40	1,943	—	1	—	—	84	—	33	134

(*a*) Fibre includes leaf and bast fibres.

(*b*) Fruits, laterite.

(*c*) Includes charcoal and sponge.

(*d*) Bamboo and Gora refer to thesame thing and so 1961-62 totals for Cols. 2 and 3 have been combined and put under one column.

Standard Form IX—Primary Forest Industries

Territorial Unit 1	*Quantity of Home-grown Wood consumed during the Year ending 31st March, 1963* 2	*Value of Outturn Ex-mill* £ 3	*Number of Persons employed during Year (Mandays)* 4	*Remarks* 5
Kabba Province:				
Igala Division—				
NNTC Sawmill Okura—Lafiya	—	—	—	Figures not available.
Zaria Province:				
Jema'a Division ...	33,978	9,180(*b*)	—	(*b*) Estimated at 60 per cent conversion factor and 9*s*-0*d* per cubic foot average value of outturn.
Total, 1962-63 ...	33,978	9,180	—	
Total, 1961-62 ...	112,245	32,841	—	

Standard Form XI—Summary in Pounds of Revenue and Expenditure for the Year ended 31st March, 1963

A. Forestry Charges

Territorial Unit	REVENUE					EXPENDITURE															
						ANNUAL RECURRENT													Special (Non-recurrent)	Grand Total	Surplus or Deficit
	Timber and Fuel	Minor Forest Produce	Reimbursement	Miscellaneous	Total	Personal Emoluments	Travelling	Other Administrative Charges	Maintenance of Buildings	Equipment	Research and Education	Protection Work	Silvicultural Work	Other Forest Improvements	Exploitation	Reimbursement	Miscellaneous	Total (Annual Recurrent)			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Adamawa																					
Government	—	—	—	—	—	2,176	903	20	—	—	—	—	424	98	—	—	—	3,621	—	3,621	—3,621
N.A. ...	1,489	39	—	10	1,538	2,616	492	—	—	173	—	335	1,537	512	—	—	—	5,665	—	5,665	—4,127
Total	1,489	39	—	10	1,538	4,792	1,395	20	—	173	—	335	1,961	610	—	—	—	9,286	—	9,286	—7,748
Bauchi																					
Government	—	—	—	—	—	3,364	1,194	18	—	—	—	—	638	13	—	—	—	5,227	—	5,227	—5,227
N.A. ...	2,773	1,299	—	—	4,072	10,720	639	—	—	579	—	7,934	2,647	931	819	—	606	24,875	297	25,172	—21,100
Total	2,773	1,299	—	—	4,072	14,084	1,833	18	—	579	—	7,934	3,285	944	819	—	606	30,102	297	30,399	—26,327
Benue																					
Government	—	—	—	—	—	4,220	546	20	—	—	—	—	777	247	—	—	—	5,810	—	5,810	—5,810
N.A. ...	6,155	2,184	—	497	8,836	6,757	212	23	—	596	—	1,050	2,830	1,017	—	—	—	12,485	—	12,485	—3,649
Total	6,155	2,184	—	497	8,836	10,977	758	43	—	596	—	1,050	3,607	1,264	—	—	—	18,295	—	18,295	—9,459
Bornu																					
Government	—	—	—	—	—	1,511	1,250	14	—	—	—	—	11	345	—	—	72	3,203	—	3,203	—3,203
N.A. ...	2,296	738	—	148	3,182	11,865	910	—	—	1,017	—	6,695	4,009	2,105	297	—	1,628	28,526	2,754	31,280	—28,098
Total	2,296	738	—	148	3,182	13,376	2,160	14	—	1,017	—	6,695	4,020	2,450	297	—	1,700	31,729	2,754	34,483	—31,301
Ilorin																					
Government	—	—	—	—	—	3,254	970	20	—	—	—	—	397	107	—	—	—	4,748	—	4,748	—4,748
N.A. ...	1,646	100	—	—	1,746	2,879	212	—	—	17	—	161	2,459	251	750	—	—	6,729	—	6,729	—4,983
Total	1,646	100	—	—	1,746	6,133	1,182	20	—	17	—	161	2,856	358	750	—	—	11,477	—	11,477	—9,731

Standard Form XI—Summary in Pounds of Revenue and Expenditure for the Year ended 31st March, 1963—*continued*

A. Forestry Charges—*continued*

Territorial Unit	REVENUE					EXPENDITURE														
						ANNUAL RECURRENT												Special (Non-recurrent)	Grand Total	Surplus or Deficit
	Timber and Fuel	Minor Forest Produce	Reimbursement	Miscellaneous	Total	Personal Emoluments	Travelling	Other Administrative Charges	Maintenance of Buildings	Equipment	Research and Education	Protection Work	Silvicultural Work	Other Forest Improvements	Exploitation	Reimbursement	Miscellaneous	Total (Annual Recurrent)			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Kabba																				
Government	10	—	—	—	10	3,173	1,120	20	—	—	—	—	2,227	288	—	—	—	6,828	—	6,828	—6,818
N.A. ...	15,195	—	—	45	15,240	4,934	907	—	—	333	—	—	2,348	302	—	—	—	8,824	—	8,824	+6,416
Total	15,205	—	—	45	15,250	8,107	2,027	20	—	333	—	—	4,575	590	—	—	—	15,652	—	15,652	—402
Kano																				
Government	—	—	—	—	—	391	804	44	148	—	—	394	—	142	—	—	—	1 923	—	1,923	—1,923
N.A. ...	352	5	—	245	602	9,824	369	—	—	2,039	—	623	2,755	810	242	—	2,389	19,051	—	19,051	—18,449
Total	352	5	—	245	602	10,215	1,173	44	148	2,039	—	1,017	2,755	952	242	—	2,389	20,974	—	20,974	—20,372
Katsina																				
Government	—	—	—	—	—	2,823	1,181	20	—	—	—	133	—	366	—	—	136	4,659	—	4,659	—4,659
N.A. ...	1,752	—	—	55	1,807	7,032	1,964	—	—	651	—	3,760	319	687	978	—	—	15,391	—	15,391	—13,584
Total	1,752	—	—	55	1,807	9,855	3,145	20	—	651	—	3,893	319	1,053	978	—	136	20,050	—	20,050	—18,243
Niger																				
Government	—	—	—	—	—	4,412	1,565	20	—	14	—	—	697	319	—	—	—	7,027	—	7,027	—7,027
N.A. ...	3,182	190	—	218	3,590	4,365	30	—	—	255	—	2,418	1,948	671	—	—	163	9,850	—	9,850	—6,260
Total	3,182	190	—	218	3,590	8,777	1,595	20	—	269	—	2,418	2,645	990	—	—	163	16,877	—	16,877	—13,287
Plateau																				
Government	—	111	—	—	111	8,066	2,735	20	816	—	—	—	4,191	—	—	—	153	15,981	—	15,981	—15,870
N.A. ...	872	781	—	—	1,653	6,183	646	—	—	1,086	—	682	4,319	708	—	—	127	13,751	—	13,751	—12,098
Total	872	892	—	—	1,764	14,249	3,381	20	816	1,086	—	682	8,510	708	—	—	280	29,732	—	29,732	—27,968

STANDARD FORM XI—SUMMARY IN POUNDS OF REVENUE AND EXPENDITURE FOR THE YEAR ENDED 31ST MARCH, 1963—*continued*

A. FORESTRY CHARGES—*continued*

Territorial Unit	REVENUE					EXPENDITURE															
						ANNUAL RECURRENT												Special (Non-recurrent)	Grand Total	Surplus or Deficit
	Timber and Fuel	Minor Forest Produce	Reimbursement	Miscellaneous	Total	Personal Emoluments	Travelling	Other Administrative Charges	Maintenance of Buildings	Equipment	Research and Education	Protection Work	Silvicultural Work	Other Forest Improvements	Exploitation	Reimbursement	Miscellaneous	Total (Annual Recurrent)			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Sardauna Government	—	—	—	—	—	1,220	931	198	—	—	—	—	—	—	—	—	—	2,349	—	2,349	—2,349
N.A. ...	534	25	—	—	559	2,129	222	45	—	126	—	447	1,706	450	—	—	—	5,125	—	5,125	—4,566
Total	534	25	—	—	559	3,349	1,153	243	—	126	—	447	1,706	450	—	—	—	7,474	—	7,474	—6,915
Sokoto Government	—	—	—	—	—	3,058	1,077	19	279	38	—	79	108	92	69	—	86	4,905	—	4,905	—4,905
N.A. ...	3,354	261	—	448	4,063	13,086	644	39	—	1,384	—	2,540	3,055	327	1,733	—	560	23,368	—	23,368	—19,305
Total ...	3,354	261	—	448	4,063	16,144	1,721	58	279	1,422	—	2,619	3,163	419	1,802	—	646	28,273	—	28,273	—24,210
Zaria Government	—	—	—	—	—	2,923	854	20	—	—	—	150	1,398	—	—	—	25	5,370	—	5,370	—5,370
N.A. ...	11,161	2,877	—	—	14,038	6,116	1,043	—	—	—	397	3,810	2,029	460	—	—	253	14,108	—	14,108	—70
Total	11,161	2,877	—	—	14,038	9,039	1,897	20	—	—	397	3,960	3,427	460	—	—	278	19,478	—	19,478	—5,440
M.H.Q. Government	—	—	—	—	—	(*a*) 10,382	3,276	60	—	5,456	1,453	91	—	923	—	24,784	—	46,425	34,528	(b) 80,953	—80,953
Forest School Government	—	—	—	—	—	6,437	2,350	75	—	44	1,736	—	50	—	—	—	827	11,519	—	11,519	—11,519
CF (Man) Sudan Government	—	—	—	—	—	7,995	2,298	—	—	—	—	—	—	—	—	—	—	10,293	—	10,293	—10,293

STANDARD FORM XI—SUMMARY IN POUNDS OF REVENUE AND EXPENDITURE FOR THE YEAR ENDED 31ST MARCH, 1963—*continued*

A. FORESTRY CHARGES—*continued*

Territorial Unit	REVENUE					EXPENDITURE														
						ANNUAL RECURRENT														
	Timber and Fuel	Minor Forest Produce	Reimbursement	Miscellaneous	Total	Personal Emoluments	Travelling	Other Administrative Charges	Maintenance of Buildings	Equipment	Research and Education	Protection Work	Silvicultural Work	Other Forest Improvements	Exploitation	Reimbursement	Miscellaneous	Total (Annual Recurrent)	Special (Non-recurrent)	Grand Total	Surplus or Deficit
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
CF (Man) Guinea Government ...	—	—	—	—	—	4,673	1,261	20	—	—	—	—	—	—	—	—	150	6,104	—	6 104	—6,104
Forestry Northern Nigeria Government ...	10	111	—	—	121	70,078	24,315	608	1,243	5,552	3,189	847	10,918	2,940	69	24,784	1,449	145,992	(b) 34,528	180,520	—180,399
N.A. ...	50,761	8,499	—	1,666	60,926	88,506	8,290	107	—	8,256	397	30,455	31,961	9,231	4,819	—	5,726	187,748	3,051	190,799	—129,873
Total ...	50,771	8,610	—	1,666	61,047	158,584	32,605	715	1,243	13,808	3,586	31,302	42,879	12,171	4,888	24,784	7,175	333,740	37,579	371,319	—310,272
N. Nigeria 1961-62 Government	116	80	—	—	196	61,538	24,741	554	1,152	537	2,379	576	7,262	2,082	246	23,879	1,310	126,247	14,913	141,160	—140,964
N.A. ...	45,382	7,748	—	1,258	54,388	84,218	7,443	2,160	—	6,815	854	29,677	28,213	11,982	4,868	—	4,732	180,962	3,832	184,794	—130,406
Total	45,498	7,828	—	1,258	54,584	145,756	32,184	2,714	1,152	7,352	3,224	30,253	35,475	14,064	5,114	23,879	6,042	307,209	18,745	325,954	—271,007

B. GAME PRESERVATION

Game Preservation Unit Government	—	—	—	—	(c)169	1,370	870	50	50	4	—	930	—	—	—	—	1,334	4,608	—	4,608	—4,439
G.P.U. 1961-62	—	—	—	—	—	1,470	875	49	—	—	—	550	—	199	—	—	1,307	4,450	—	4,450	—4,450

(*a*) Includes salaries of Research Officer, the students at the School of Forestry, Ibadan and disturbances allowances.
(*b*) Forestry Development plan expenditure. Separate details of expenditure by the Management and Game Units are not given here.
(*c*) Game Reserve Fees.

Standard Form XII—Comparative Statement in Pounds for the Ten Years ended 31st March, 1963

A. Forestry Charge

	1953–54	1954–55	1955–56	1956–57	1957–58	1958–59	1959–60	1960–61	1961–62	1962–63
Government:										
Revenue	270	319	425	360	486	399	456	304	196	121
Expenditure ...	87,344	93,369	104,480	112,506	142,958	120,606	120,198	124,303	141,160	180,520
Surplus/Deficit ...	—87,074	—93,050	—104,055	—112,146	—142,472	—120,207	—119,742	—123,999	—140,964	—180,399
Native Authority:										
Revenue	43,965	44,999	55,878	58,363	64,882	70,323	64,205	72,281	54,388	60,926
Expenditure ...	95,374	108,675	130,780	148,728	145,919	159,327	180,263	181,835	184,794	190,799
Surplus/Deficit ...	—51,409	—63,674	—74,902	—90,365	—81,037	—89,004	—116,058	—109,554	—130,406	—129,873
Northern Nigeria:										
Revenue	44,235	45,318	56,303	58,723	65,368	70,722	64,661	72,585	54,584	61,047
Expenditure ...	182,718	202,042	235,260	261,234	288,877	279,933	300,461	306,138	325,594	371,319
Surplus/Deficit ...	—138,483	—156,724	—178,957	—202,511	—223,509	—209,211	—235,800	—233,553	—271,370	—310,272

B. Game Presevation

Game Preservation Unit:										
Revenue	—	—	—	—	—	—	—	—	—	169
Expenditure ...	—	—	—	—	3,999	2,746	3,752	4,395	4,450	4,608
Surplus/Deficit ...	—	—	—	—	—3,999	—2,746	—3,752	—4,395	— 4,450	—4, 439

Standard Form XIII—Effective Strength of Forest Staff on 31st March, 1963
(Excluding Officers on Retirement Leave)

Territorial or Other Unit	Senior Staff				Intermediate Staff		Subordinate Field Staff					Clerical Staff	Technical Subordinate	Marine Staff	Permanent Labour	Other Miscellaneous
	Colonial Forest Service	Nigeria Forest Service	Others	Total	Recruited in Europe	Recruited Locally	Forest Rangers	Foresters	Forest Guards	Others	Total					
1	2	2A	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A.—Government																
Regional Headquarters	2	1	—	3	—	—	—	—	—	—	—	(*a*)	—	—	—	—
C.F. (Man) Sudan Zone	3	—	1	4	—	—	1	—	—	—	2	2	43	—	26	3
C.F. (Man) Guinea Zone	2	—	1	3	—	2	—	—	—	—	2	1	1	—	25	5
Forest School ...	—	1	1	2	—	1	—	1	—	—	2	2	1	—	10	2
Courses and Leave	3	1	1	5	—	19	—	—	—	—	19	—	—	—	—	—
Adamawa Province	1	—	—	1	—	1	—	—	—	—	1	1	—	—	—	2
Bauchi Province	1	—	—	1	—	—	—	—	—	—	—	3	1	—	—	3
Benue Province	1	—	—	1	—	1	—	—	—	—	1	3	1	—	7	2
Bornu Province	—	1	—	1	—	1	—	—	—	—	1	2	1	—	—	1
Ilorin Province ...	1	—	—	1	—	1	—	1	—	—	2	3	1	—	1	1
Kabba Province	—	—	1	1	—	2	1	—	—	—	3	3	—	—	2	—
Kano Province	—	1	—	1	—	—	—	—	—	—	—	2	—	—	2	2
Katsina Province	1	—	—	1	—	1	—	—	—	—	1	2	1	—	—	2
Niger Province ...	—	1	1	2	—	3	—	2	—	—	5	4	1	—	3	2
Plateau Province	2	—	—	2	—	1	—	1	—	—	2	4	1	—	9	5
Sardauna Province	—	—	1	1	—	—	—	—	1	—	1	1	1	—	12	2
Sokoto Province	—	1	—	1	—	1	—	—	—	—	1	3	1	—	2	3
Zaria Province ...	1	—	—	1	—	—	—	—	—	—	—	3	1	—	13	2
Forest Staff: Total, Government	18	7	7	32	—	33	2	5	1	—	43	39(*b*)	55	—	112	37

STANDARD FORM XIII—EFFECTIVE STRENGTH OF FOREST STAFF ON 31ST MARCH, 1963 (EXCLUDING OFFICERS ON RETIREMENT LEAVE)—*continued*

Territorial or Other Unit	*Senior Staff*				*Intermediate Staff*		*Subordinate Field Staff*					*Clerical Staff*	*Technical Subordinate*	*Marine Staff*	*Permanent Labour*	*Other Miscellaneous*
	Colonial Forest Service	*Nigeria Forest Service*	*Others*	*Total*	*Recruited in Europe*	*Recruited Locally*	*Forest Rangers*	*Foresters*	*Forest Guards*	*Others*	*Total*					
1	2	2A	3	4	5	6	7	8	9	10	11	12	13	14	15	16
B.—Native Authority																
Adamawa Province	—	—	—	—	—	—	1	4	8	6	19	—	1	—	—	—
Bauchi Province	—	—	—	—	—	—	2	7	54	146	209	3	2	—	—	3
Benue Province	—	—	—	—	—	—	—	8	40	15	63	1	1	—	6	1
Bornu Province	—	—	—	—	—	—	3	14	45	90	152	2	5	—	67	5
Ilorin Province ...	—	—	—	—	—	—	1	1	11	22	35	1	—	—	7	1
Kabba Province	—	—	—	—	—	—	4	6	39	15	64	2	—	—	—	—
Kano Province ...	—	—	—	—	—	—	1	7	72	—	80	5	3	—	22	2
Katsina Province	—	—	—	—	—	—	2	4	28	—	34	2	4	—	—	3
Niger Province ...	—	—	—	—	—	—	2	10	24	56	92	—	—	—	—	—
Plateau Province	—	—	—	—	—	—	—	7	38	18	63	1	—	—	21	2
Sardauna Province	—	—	—	—	—	—	1	2	15	5	23	—	2	—	12	—
Sokoto Province	—	—	—	—	—	—	1	22	21	136	179	1	2	—	10	3
Zaria Province ...	—	—	—	—	—	—	2	5	33	17	57	3	—	—	58	2
Forest Staff: Total, Native Authority ...	—	—	—	—	—	—	20	97	428	526	1,070	21	20	—	203	22
Forest Staff: Total, Northern Nigeria ...	18	7	7	32	—	33	22	102	429	526	1,113	60	45	—	315	59
Northern Nigeria, 1961-62 ...	21	7	2	30	—	31	19	100	402	521	1,042	71	61	—	276	65
Regional Game Preservation Unit	—	1	—	1	—	—	—	—	—	14	14	2	—	—	—	1
1961-62	—	1	—	1	—	—	—	—	—	—	—	1	15	—	—	—

(*a*) No Ministry Headquarters Clerical Staff included as all Clerical Staff now part of Administrative Division of the Ministry and not Forest Division Staff.
(*b*) Show Clerical Staff of Administrative Division posted to Forest Offices in the Province

APPENDIX I

Trees Felled

Province	*Inside Reserve*									*Outside Reserve*									*Grand Total*		
	For Export			*For-Local Use*			*Total Inside Reserves*			*For Export*			*For Local Use*			*Total, Outside Reserves*					
	1960-1961	1961-1962	1962-1963	1960-1961	1961-1962	1962-1963	1960-1961	1961-1962	1962-1963	1960-1961	1961-1962	1962-1963	1960-1961	1961-1962	1962-1963	1960-1961	1961-9962	1962-1963	1960-1961	1961-1962	1962-1963
Adamawa	—	—	—	—	—	—	—	—	—	—	—	—	1,123	1,072	1,615	1,123	1,072	1,615	1,123	1,072	1,651
Bauchi ...	—	—	—	—	—	—	—	—	—	—	—	—	1,174	2,754	1,531	1,174	2,754	1,531	1,174	2,754	1,531
Benue ...	—	—	—	—	12	46	—	12	46	—	—	—	2,157	1,991	1,694	2,157	1,991	1,694	2,157	2,003	1,740
Bornu ...	—	—	—	—	—	—	—	—	—	—	—	—	572	1,033	861	572	1,033	861	572	1,033	861
Ilorin ...	—	—	—	—	—	—	—	11,998	—	67	—	101	287	375	8,266	354	375	8,266	354	12,373	8,367
Kabba ...	—	—	—	—	—	—	—	—	—	—	—	—	3,928	18,080	5,936	3,928	18,080	5,936	3,928	18,080	5,936
Kano ...	—	—	—	—	—	—	—	—	—	—	—	—	18	—	—	18	—	—	18	—	—
Katsina ...	—	—	—	—	—	12,462	—	—	12,462	—	—	—	241	8,108	541	241	8,108	541	241	8,108	13,003
Niger ...	—	—	—	—	—	8,188	—	—	8,188	—	—	—	31,537	21,109	1,021	31,537	21,109	1,021	31,537	21,109	9,209
Plateau	—	—	—	—	—	—	—	—	—	—	—	—	730	541	724	730	541	724	730	541	724
Sardauna	—	—	—	—	—	—	—	—	—	—	—	—	—	225	198	—	225	198	—	225	198
Sokoto	—	—	—	—	—	—	—	—	—	—	—	—	2,547	2,351	1,897	2,547	2,351	1,897	2,547	2,351	1,897
Zaria ...	—	—	—	181	—	763	181	—	763	—	—	—	3,403	39,990	1,210	3,403	39,990	1,210	3,584	39,990	1,973
Total ...	—	—	—	181	12	21,599 (*a*)	181	12,010	21,599 (*a*)	67	—	101	47,717	97,629	26,494	47,784	97,629	26,494	47,965	109,630	48,154

(*a*) Includes Poles taken in Forest Reserves.

APPENDIX II

Export of Wild Animals by Air From Kano, 1962-63

Birds

Species	1961–62	1962–63	*Increase +- Decrease—*
African Jacana	—	5	+ 5
Bateleur	1	1	—
Bonelli's Warbler	2	6	+ 4
Bustard	—	—	—
Canary Bird	4	3	— 1
Cardinal Bird	1	—	— 1
Crocodile Bird	1	50	+ 49
Crowned Crane	56	338	+ 282
Eagle	7	60	+ 53
Egyptian Goose	—	1	+ 1
Egyptian Plover	—	103	+ 103
Finch	—	10	+ 10
Fish Eagle	1	3	+ 2
Goshawk	—	—	—
Grey Turacus	—	8	+ 8
Guinea Fowl	—	11	+ 11
Hammerkop	9	4	— 5
Hawk	1	15	+ 14
Heron	—	—	—
Hornbill	4	3	— 1
Ibis	1	2	+ 1
Jabiru	17	4	— 13
Kassob?	8	—	— 8
Kite	—	1	+ 1
Knob-billed Goose	17	1	— 16
Knob-nosed Duck	1	—	— 1
Lily Trotter	3	—	— 3
Love Bird	4	—	— 4
Marabou Stork	9	10	+ 1
Open-bill Stork	—	2	+ 2
Ostrich	2	1	— 1
Peacock	2	—	— 2
Pelican	2	5	— 3
Pigmy Goose	108	112	+ 4
Plantain Eater	8	8	—
Purple Gallinule	3	—	— 3
Saddle-bill Stork	—	1	+ 1
Secretary Bird	—	6	+ 6
Senegal Parrot	—	—	—
Snipe	1	—	— 1
Speckled Pigeon	—	12	+ 12
Spur-winged Goose	15	15	—
Starling	—	27	+ 27
Wattled Plover	—	5	+ 5
West African Grey Parrot	493	534	+ 41
White-bellied Stork	3	45	+ 42
White-faced Duck	27	68	+ 41
Woolly-neck Stork	—	3	+ 3
Yellow-bellied Fruit Pigeon	—	1	+ 1

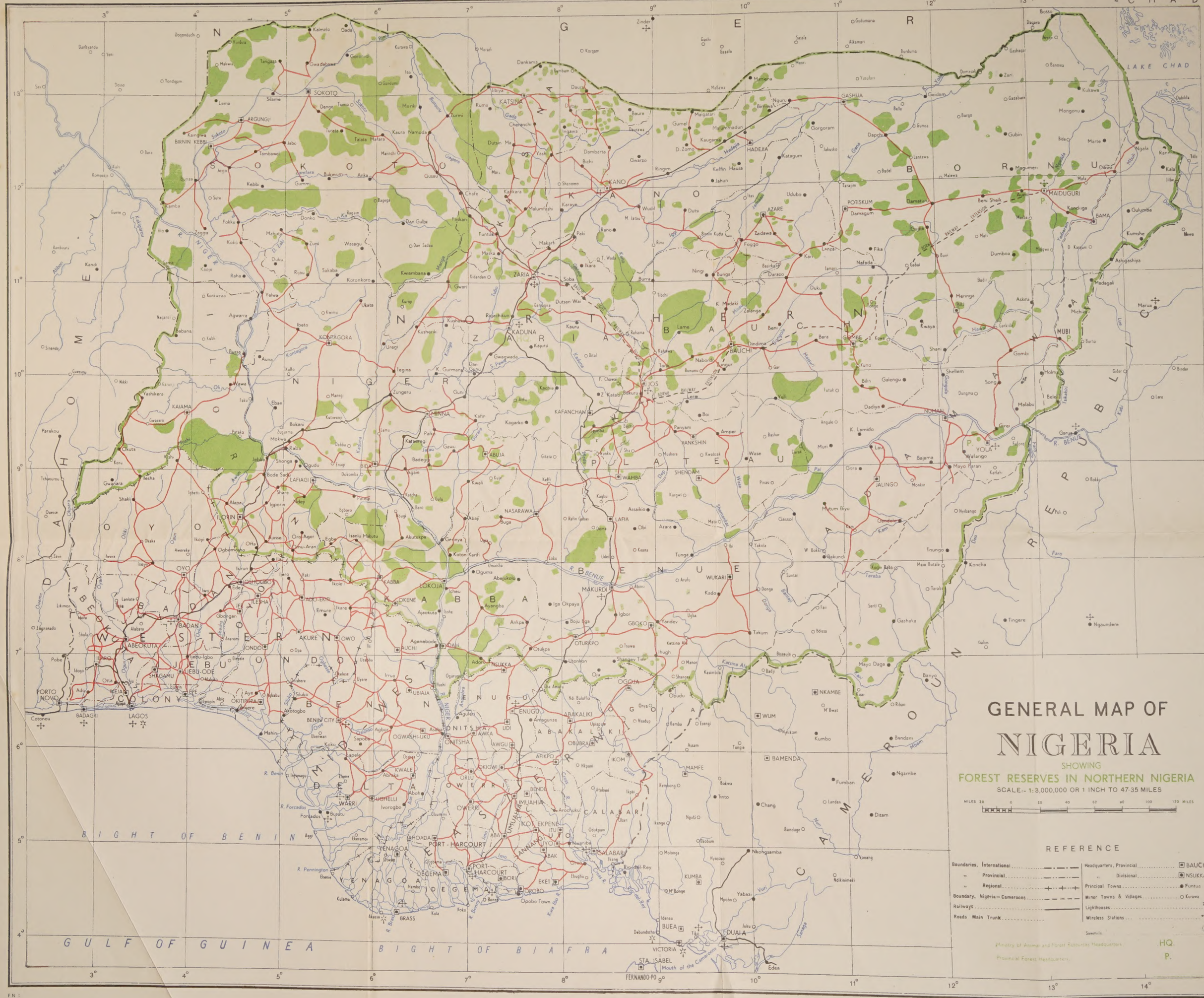
APPENDIX II—*continued*

Export of Wild Animals by Air From Kano, 1962–63—*continued*

Animals

Species	1961–62	1962–63	*Increase+ Decrease—*
African Python	—	6	+ 6
Antelope	2	—	— 2
Baboon	5	—	— 5
Bush Baby	—	5	+ 5
Chimpanzee	11	14	+ 3
Crocodile	1	—	— 1
Dog-faced Baboon	4	—	— 4
Elephant tortoise	1	—	— 1
Green Monkey	3	30	+ 27
Hyena	—	1	+ 1
Hyrax	5	—	— 5
Mandril	—	3	+ 3
Mona Monkey	1	—	— 1
Monkey (unspecified)	1	—	— 1
Patas (Red) Monkey	1,550	2,617	+ 1,067
Porcupine	—	3	+ 3
Red-flanked Gazelle	1	—	— 1
Royal Python	—	5	+ 5
Tortoise	1	2	+ 1

FOREST RESERVES IN NORTHERN NIGERIA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BIRNIN KEBBI
KATSINA
KANO
GASHUA
HADEJIA
POTISKUM
DAMATURU
MAIDUGURI
BAMA
AZARE
ZARIA
KADUNA
KONTAGORA
BAUCHI
GOMBE
MUBI
JOS
MINNA
ABUJA
KAFANCHAN
RANKSHIN
NUMAN
YOLA
JALINGO
WAMBA
SHENDAM
LAFIA
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MAKURDI
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BAMENDA
NKAMBE
WUM
KUMBA
BUEA
DUALA
VICTORIA
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NKONGSAMBA
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NDIKINIMEKI
KUMBA
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MAIO BUTALE
KONCHA
TARABA
GASHAKA
TINGERE
NGAUNDERE
MAYO DAGA
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NGAMBE
FUMBAN
LANDEN
DITAM
CHANG
KONTAGORA
KAINJI
KOMPATA
KAMBA
ZUGURU
ZUNGERU
TEGINA
KUSHERIKI
DAN GULBA
FOKKU
KOKO
ZAGGA
ILLO
KAMBA
GUSAU
TALATA MAFARA
TAMBAWEL
TANGAZA
GWADABAWA
KALMALO
GADA
KURDUA
MAKWU
DOGONDUCHI
DUNKWANDU
YENI
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DOSSO
TONDIGAM
BARA
KAINGIWA
LEMA
SILAME
DENGE
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TURETA
JABO
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